JANUARY, 1957

The American City

Helicopters are especially suited to pinpoint search over wide areas, as New York City police demonstrate

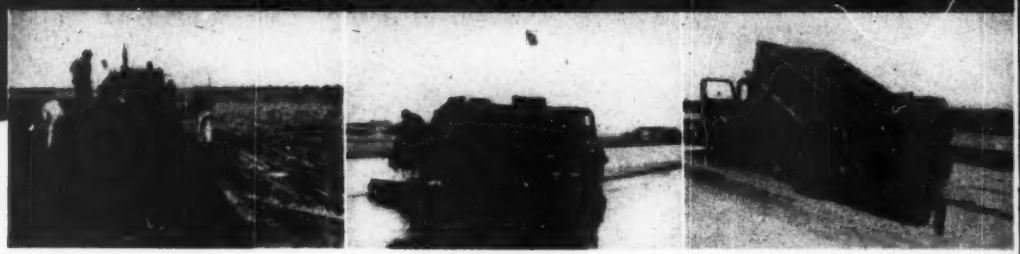
See pages 92 93 and 123

Municipal Airport

BRIDGEPORT, CONN.

Faithfully yours 50 for Fifty Years

Reconditioned with Texaco Asphalt products



Small photographs (left) Laying hot-mix Texaco Asphaltic Concrete paving on runway of Bridgeport Municipal Airport . . . (center) Applying seal coat of Texaco RC-2 Cutback Asphalt to runways and shoulders . . . (right) Covering seal coat with aggregate—dark aggregate for runway proper, light aggregate for shoulders.

The Leverty and Hurley Co., Inc. of Bridgeport were prime contractors. Ford Brothers, Inc., of New Haven, Conn., applied Cutback Asphalt prime, tack and seal coats.

Bridgeport, one of New England's most important industrial centers, is served by this modern 3-runway airport. During the past two years, the city has carried out an extensive reconditioning program on this air field. Constructed some years ago on a filled-in salt marsh, it had settled in many places.

The runways have been brought up to grade and extended to their present 5,000-foot length with hot-mix Texaco Asphaltic Concrete. More than 15,000 tons of this resilient, heavy-duty asphalt pavement were required.

The width of Bridgeport's runways is ample, consisting of 150 feet of paving, plus a 50-foot shoulder on each side. A seal coat of Texaco RC-2 Cutback Asphalt was applied to both the runway proper and the shoulders. For greater visibility from the air, aggregates of two contrasting colors were used as cover for the seal coat—dark aggregate on the runway pavement, light aggregate on the shoulders.

Today, Bridgeport boasts a Municipal Airport which in every respect measures up to the needs of this important industrial community.

For commercial or military air fields, Texaco Asphalt products provide a variety of types of construction. Write for two helpful booklets about these types.

THE TEXAS COMPANY, Asphalt Sales Dept., 135 E. 42nd Street, New York City 17

Boston 16 Chicago 4 Denver 1 Houston 1 Jacksonville 2 Philadelphia 2 Richmond 19

TEXACO

TEXACO ASPHALT

Index to Contents of This Issue

AIRPORTS AND AVIATION
Crops from Your Airport Land 5
Dome Lights Give Glare-Free Ramp Illumination 7
Get Airport Zoning Regulations Early 23
Miami Airport to Get High-Intensity Lighting 23
Puerto Rico's "International" Airport 23
Municipal Planning for Helicopters 92
Helicopters for Police Departments 123

BOND MARKET
Industrial Plants Parking Bonds Bonds — Housing Authorities Utility Districts 157
Representative Municipal Bond Sales 157

BUSINESS MACHINES AND SYSTEMS
A Noisy Office Costs Money and Efficiency 97
Machines Speed County's 40,000 Tax Bills 155
To Improve Accounting in Council Bluffs 155

CITIZENS AND GOVERNMENT
No Republican Sewer Pipe or Democratic Fire Engine 93
First Annual LaGuardia Awards Presented 162

CIVIL DEFENSE
New Civil Defense Films 124

CONFERENCES AND CONVENTIONS
Mayors' Association Meeting in New Jersey 105
Institutes and Area Meetings Planned for 1952 by State Municipal Leagues 110
Conventions When and Where 165

COUNCIL-MANAGER PLAN
Kansas City Managers Form Association 103
Recent City Manager Appointments 162

EDUCATION AND TRAINING
Citizens Organize for Better Schools 9
Our Fight for Educational Television 102

FINANCE AND TAXATION
Pointers for Tax Assessors and Collectors 108
$500 Million for Federally Aided Highways 109
Tax Collections in 1950 119

FORESTRY, CITY
Baltimore Programs Its Tree Care 104

FUEL
Municipal Oil Specifications 114

GOVERNMENT AND ADMINISTRATION
Law Officers Discuss Municipal Trends ... 97
What a Businessman Hopes to Do as Mayor 103
Government by the People 106
Pointers for Tax Assessors and Collectors 108
Institutes and Area Meetings Planned for 1952 by State Municipal Leagues 110
Four Urgent Municipal Needs 119
AMA on Federal-Local Problems 149
Research Directors Get Philadelphia Posts 157
Phoenix Gets New Municipal Code 159

HOUSING
"Operation Family Reunion" 145
Life and Spirit Grow 171

INDUSTRY AND THE COMMUNITY
Small Towns and New Large Industries ... 91

JUVENILE DELINQUENCY
Wiser Control of Juveniles 118

LAWS AND LEGAL DECISIONS
Zoning and Planning Notes 159
Legal Notes and Decisions 161

LIBRARIES
Trends in Public Libraries Today 88

LIGHTING, OUTDOOR
Miami Airport to Get High-Intensity Lighting 23
333 Miles of 20,000-Lumen Mercuries 127
Mercury-Vapor Lighting 129
Pleasant Night Driving in Denton, Texas 131
Mercury Lights on Valley Highway 186

MOTION PICTURES
Municipal Movies, Burbank and Philadelphia 112
New Civil Defense Films 124

PEST CONTROL
Flies Don't Like Grandfield, Okla. 117

PLANNING AND ZONING
Large Redevelopment Planning Advance ... 7
To Popularize Zoning 9
Small Towns and New Large Industries ... 91
Municipal Planning for Helicopters 92
Planning Competition, Haifa, Israel 141
Zoning and Planning Notes 159

POWER
Conversion Pays in Cheaper Kilowatts ... 143

PUBLIC RELATIONS
Community Advertising Must Reach Local Citizens, Too 101
Modests Can Be Overdone, Survey Shows 109
The City Tells Its Story 112
A Fine Idea If Your City's Attractive ... 113

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THE MUNICIPAL INDEX and ATLAS (over 800 pages), published annually by the American City Magazine Corporation, when used with the current advertisements in THE AMERICAN CITY, provides officials with the latest information on all types of municipal equipment and supplies.

PUBLIC SAFETY
Cities Centralize Ambulance Service 5
Better Artificial Respiration 17
"Handie-Talkie" Units at Warehouse Fire 17
Minneapolis Increases Fire-Service Charges to Near-by Communities 91
Wiser Control of Juveniles 118
Helicopters for Police Departments 123
Below-Ground Radio Fire Alarm 171
Arson Investigators' Seminar at Purdue .. 179

PUBLIC WORKS
The Comision de Fomento Nacional 98

PUBLICATIONS
Manufacturers' Catalogs 25
Municipal and Civic Publications 167

PURCHASING
Municipal Purchasing News 190
Features of New Purchasing System 141
Municipal Purchasing News 190

QUIZ
The American City Quiz 5

REFUSE COLLECTION AND DISPOSAL
Shielded Refuse-Collection Spots 7
Making Refuse Disposal Profitable 19
More on Grinders in Los Angeles 19
How to Make Refuse Collection Sanitary 90
New Jersey State Law Makes Open Dumps Illegal 173

SEWERAGE AND SEWAGE TREATMENT
Faster and More Economical Sewage Treatment 15
New York Gets Larger Sludge-Tanker ... 15
More on Grinders in Los Angeles 19
Flame-Spalled Diffuser Plates Improve Sewage Aeration 83
Storm Sewer Tunnel Preferred 100
What Stream Pollution Means Nationally 139

STREET CLEANING AND SNOW REMOVAL
A German Version of the Leaf Blower .. 13
Center Windrows in West Memphis, Ark. 13
How Catch-Basins Are Cleaned in Irvington, N. J. 13
No Need for High Snowbanks 13
Snow Removal by Radiant Heat 98

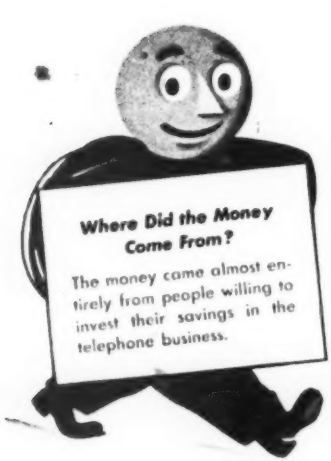
STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE
Concrete Short Course at Georgia Tech 21
How to Avoid Poor Seal Coats 21
Nashville, Tenn., Surfaces 40,000 Square Yards in a Day 21
Sidewalk Forms Curb 21
St. Paul's Rubberized Street 85
Street Construction and Maintenance 120

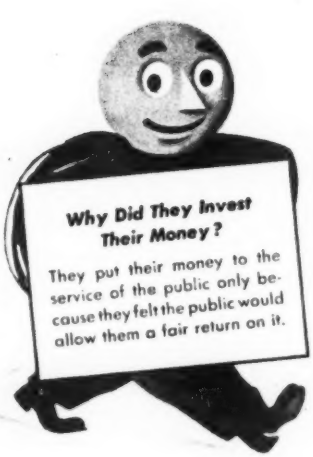
TRAFFIC CONTROL AND FACILITATION
Parking Lots, 750 Cars at $363 per Stall 133
Profitable Parking Meters 135
Business Provides New Parking Garages .. 137
More Trolley Coaches in Chicago 137
Part-Time Policewomen in New Orleans .. 171

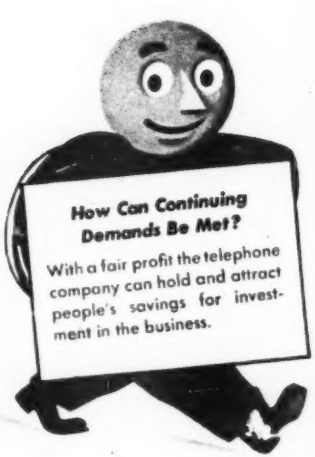
WATER SUPPLY AND TREATMENT
How Long-Range Water Costs Have Varied 5
Milwaukee to Sell Water Meters 5
Are Water-Works Salaries Adequate? ... 9
Get Bids on Applications to Build in '52 11
Record-High Water Use Forces Enlargements 11
Some Water-Use Data 11
Winston-Salem Surge Tank 11
What Good Watershed Management Means to Municipal Water Supply 86
Decatur Water Works Quadruples Capacity 94
A Plastic Pipe Water System 116
It Takes More Than a Pump 147
New York City Watershed Patrol 154
Proposed Giant Conduit Will Help Fill Southern California Water Needs 165
Efficiency Outweighs Cost in Centrifugal Pumps 173
Ask for More Emergency Disinfection Equipment 186

Index to Advertisers, p. 218 • Coming Conventions, p. 165 • Copies of this issue printed, 23,000

$4,000,000
Added Every Day to
Serve the Nation
The Bell System has made an average additional investment of $4,000,000 every working day in the last six years to expand and improve telephone service.


Where Did the Money Come From?
The money came almost entirely from people willing to invest their savings in the telephone business.


Why Did They Invest Their Money?
They put their money to the service of the public only because they felt the public would allow them a fair return on it.


How Can Continuing Demands Be Met?
With a fair profit the telephone company can hold and attract people's savings for investment in the business.

BELL TELEPHONE SYSTEM

Our Municipal Notebook

How Long-Range Water Costs Have Varied

A CENTURY ago, a man worked eight days to provide his family with service from the public water supply for a year. At present, he has to work only a single day to provide a much better and more adequate water supply for his family for a year. L. R. Howson of Alvord, Burdick and Howson, Chicago consulting engineers, pointed this out before a recent waterworks meeting held at Northwestern University. He based his findings on a study of one of the oldest water utilities in this country, built more than 130 years ago. It originally drew from springs, by gravity without supplemental pumping, and used wooden pipes, carrying the water to an earth reservoir and thence to the customers. At that time, labor received 75 cents per day, the superintendent $1 per day, and the "directors of the water company while on special work $1.75 per day." The chestnut-log pipe cost 9 cents per foot. Trenching and backfilling varied from 6 cents to 12 cents per lineal foot. The average revenue per customer was $6 per year.

The capital investment in that water works, by the time it was supplying 250 families, was about $150 per customer, and there was approximately one customer for each 20 people residing in the city.

Today, the average book cost of water-works properties is likely to be about $75 per capita or $300 per customer, of which there is probably one out of each four urban residents. Present-day construction costs average about $500 per customer. Thus, in a period of a century and a quarter the cost per customer has more than tripled, the cost of labor has increased twenty-fold, and the cost of a vastly superior, more abundant water has increased about 150%.

Milwaukee to Sell Water Meters

STARTING January 1, 1952, water users in Milwaukee can get meters either from water works or from a plumber in ⅝-inch, ¾-inch and 1-inch sizes, according to Edward F. Tanghe, Superintendent. This new method was adopted because some of the water users thought that the plumbers were charging too much for meters. The larger-sized meters will still be purchased from plumbers.

The water works tests and sets all meters whether the meter is purchased from a plumber or from the city. This gives the water works control over the type and accuracy of meter to be used. Meters are maintained by the water works unless damaged by frost, hot water, or water hammer.

Crops from Your Airport Land?

CITIES apparently are beginning to cash in on the high prices of agricultural products by turning excess airport land to farm purposes. In 1950 the State Aeronautics Department at Lincoln, Nebr., reported an income of $86,718 from the operation of five Army surplus airports in the state. Of this, $46,802 came directly from farming operations.

Lincoln is not the only Nebraska city that conducts farming operations on its airports. Others are: Omaha, Fremont, Beatrice, Falls City, Grand Island, Hastings, Kearney, Ord, Minden, Scottsbluff, Gordon, McCook, Imperial, Sidney, Alliance, Ainsworth, and Wayne. These all are municipally owned fields.

In addition, the Nebraska Department of Aeronautics operates four surplus Army airfields at Fairmont, Bruning, Harvard, and Scribner. These all operate on their own income. From July 1950 to June 1951, the department netted $43,640 from agricultural income on the airport, nearly double the income from rental of buildings. These fields operate under the direction of Rolland Harr, Supervisor of Airports, Department of Aeronautics in Lincoln.

Lewiston, Mont. (population 6,000), receives from $900 to $2,600 per year from the hay raised on the airport, according to F. E. Liebetrau, City Engineer. It gets one cutting of hay a year.

Clarion, Iowa (population 3,000), realized a net of $4,000 from the sale of corn and soy beans grown between the runways of the municipal ariport.

Cities Centralize Ambulance-Dispatching Service

CENTRALIZED emergency ambulance dispatching-service is being used by an increasing number of cities in an effort to provide speedy ambulance service to their residents while, at the same time, preventing numerous ambulances from converging on the scene of accidents.

A survey by the American Municipal Association shows that city police shoulder the responsibility for ambulance-dispatching in most cities. In 24 of the 44 cities questioned, the full responsibility for dispatching emergency ambulances was centered in the police department, while in six others responsibility is split between the police and other city departments or private agencies.

In Atlanta; Bridgeport, Conn.; Kansas

The American City Quiz

Match Wits with the Experts

QUESTIONS

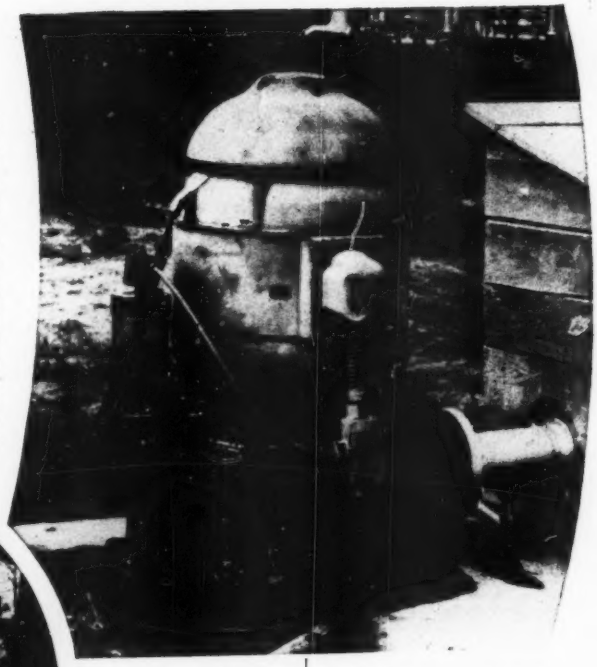
1. *How much parking area should be supplied in a business district?*
2. *How successful have water departments found the branch payment stations?*
3. *Where is the largest paving project in this country using rubber admixture in the asphalt surfacing?*
4. *How can one prevent chlorides from causing new concrete to scale?*
5. *British practice indicates what thickness for sanitary-fill work?*
6. *How widespread has the use of turbine pumps become for the conventional pumping station?*
7. *How much of the air-pollution problem will be removed by enforcing restrictions in the business districts?*
8. *What operating efficiencies should one expect from a modern diesel engine using natural gas for fuel?*
9. *In social security legislation covering municipal employees, is the city considered the employer?*
10. *What is a safe way to protect municipal records?*

(Answers on page 9)

The right combination

FOR ANY WATER SUPPLY JOB

Layne offers you the right combination of unmatched experience plus modern equipment for installing well water supply units of any size—and for any purpose. Layne has made more water supply installations than any other firm in the entire world, and this valuable experience places Layne in a position to unquestionably do every job exactly right. Once the installations have been made, a complete record of everything is kept; strata formation, sand porosity, casing details, sand screen length, diameter and metal used, all pump information including bearings, shafting, impellers and operating characteristics. With such information, Layne is always in a position to give quick and most economical service for adjustments or repairs if and when needed.



Layne made the above well and pump installation to secure a constant and economical supply of cooling water for a large gasoline refinery.

When completed the above pictured well flowed more than 2 feet above the casing. With the installation of a Layne pump, the production was 1200 G.P.M.

LAYNE CATALOGS

Layne offers a wide range of fully illustrated catalogs covering every phase of well water installations, pumps, well cementing and sand screens. Your request for any will be answered promptly.

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Layne accepts your contract for furnishing everything; Layne supervision, Layne drill crews, Layne drill equipment, Layne designed and Layne built louver type sand screen and Layne high efficiency vertical turbine pumps. No other firm is involved, therefore there is no divided responsibility. This plan gives you the very finest well water supply units that world wide experience and skill can possibly build.

LAYNE & BOWLER, INC.

General Offices, Memphis 8, Tenn.

Layne

WATER SUPPLY

WELLS & PUMPS

City, Mo.; Minneapolis; New Orleans, and San Francisco, ambulance dispatching is centralized at public hospitals, while the fire departments in Baltimore; Long Beach, Calif.; Lowell, Mass., and Washington, D. C., have this responsibility.

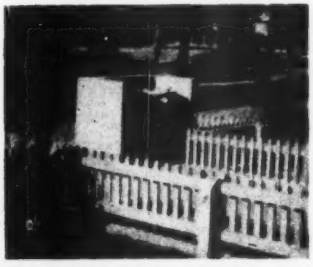
Centralized emergency ambulance service may also be handled by private agencies. Typical of the sort of agreements that cities have with such agencies is that of Hartford, Conn. There, an agreement between the city and four ambulance services prevents more than one ambulance from answering an accident call and also provides for adequate ambulances standing by at all times.

The Hartford ambulance service maintains a central switchboard to which all ambulance calls are directed. The four participating companies are called on a rotating plan. Before an ambulance answers a call, the nearest hospital is determined as its destination. Each ambulance has an attendant in addition to the driver — both of whom are trained in first aid.

Shielded Refuse-Collection Spots

STREET-SIDE collection of refuse avoids unsightliness in multiple-dwelling residences in Lubeck, Germany. Concrete shields hide the containers and at the same time allow them to be placed conveniently. These photographs come from Walter Kaupert, engineer of that city.

The shields for the refuse containers give this appearance from the street.



This is the way the collection spot looks when seen from the house side.

Dome lights that illuminate without glare for the pilot or the control towers.

Dome Lights Give Glare-Free Ramp Illumination

DOME-SHAPED reflectors mounted on pipe standards provide a high intensity of illumination for both the passenger and the ramp-loading areas at the Allentown-Bethlehem-Easton new airport-administration building. Lights of this type are normally used to illuminate pump "islands" at gasoline service stations, but Airport Manager Wilfred M. Post, Jr., reports that they do an excellent lighting job of both areas at this airport without throwing any light out on the field where it would be disturbing to pilots while landing, taking off, or taxiing. In addition, this type of light does not throw any light upward where it might annoy control tower personnel or be confused by pilots with any of the landing-aid lights.

Greater Intensity Achieved with Lights

The lights are made by the Westinghouse Electric Corporation and are spaced about 15 feet apart along the fence line. Their mounting height is about 13 feet above the ground level; 200-watt lamps are used in the 18-inch diameter reflectors. Six 1,500-watt Westinghouse floodlights mounted on the roof of the building augment the other lights and provide more intensity on the outer loading ramp. It is planned to install visors on these floodlights to cut off the light at the outer ramp.

This new building, as well as the expanded airport facilities, were designed by Michael Baker, Jr., Inc., of Rochester, Pa. It is operated by the Lehigh-Northampton Airport Authority.

Philadelphia Gets Large Redevelopment Planning Advance

ADMINISTRATOR Raymond M. Foley of the Housing and Home Finance Agency approved in November a preliminary advance of $194,974 to the Redevelopment Authority of the City of Philadelphia to be used in studies and preparation of plans for the redevelopment of 2,550 acres known as the Eastwick area.

This is the largest city area for which an advance has been made under the Slum Clearance and Urban Redevelopment title of the Housing Act of 1949, Mr. Foley said. The local Redevelopment Authority estimates that homes for 15,000 families may be built in this southwest section of the city. It includes land surrounding the International airport. Industrial development will be restricted to 650 acres.

A capital-grant reservation of $6,300,000 has been earmarked for development of the project.

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Are Water-Works Salaries Adequate?

APPARENTLY not, either to hold present water-works personnel or to encourage young men to enter the field. Leon Smith, Superintendent of Water and Sewerage, Madison, Wis., made a survey to find out and reported his findings at the recent American Water Works Association meeting in Miami, Fla. His survey was part of a committee report. Salaries ran as follows:

	Salaries per Month	
	Large Cities	*Small Cities*
Superintendent	$1,047	$280
Chief Engineer	918	248
Office Manager	676	219
Other Technicians	650	235
Shop Foremen	438	200
Meter Readers	306	200

Practically all cities over 10,000 have a full-time technician. Two-thirds give two weeks' vacation with pay. One-third give one week's vacation with one year of service, and three weeks with five years' tenure, and 16 days of sick leave after two years; 72% have pension plans which yield 50% of the salary at 65, with the employees contributing to the plan. The work week in cities with a population over 50,000 has been stabilized at 40 hours.

To Popularize Zoning

OKLAHOMA COUNTY is no place for totem-pole development" is the theme of a handy-sized pamphlet entitled, *Zoning Oklahoma County*, recently prepared by the Institute of Community Development of the University of Oklahoma, at Norman, for wide public distribution throughout the county. The pamphlet explains briefly the powers and duties of the County Commissioners and the County Planning Commission with regard to zoning regulations.

If You Plan To Buy, Build or Sell,
BE SURE TO CHECK THE FOLLOWING
Zoning ...
Setback Requirements ...
Subdivision Regulations ...
Plat Restrictions ...
Building Permit ...
DON'T BE LOW MAN ON THE TOTEM POLE-
CHECK THE ZONING
BEFORE YOU BUILD!

Citizens Organize for Better Schools

THE "hows" and "whys" of citizens' committees for the public schools are presented in *The School Executive*'s special January 1952 issue. Entitled, "Citizens Organize for Better Schools," this special issue represents the most comprehensive round-up of information so far undertaken on the vital work of state and local citizens' committees working in their communities to give American youth a better education today.

Schoolmen and laymen who are actively concerned with this "grass roots" movement to improve their schools present their views and evaluate their activities in the January *School Executive*. Actual case studies are presented describing the work of several state and local committees.

Designed to serve as a basic reference handbook on citizens' committees, the special issue is priced at $1 for a single copy; 50 cents each for 10 copies or more. Address all orders to *The School Executive*, *470 Fourth* Avenue, New York 16, New York.

The American City Quiz

ANSWERS TO QUESTIONS ON PAGE 5

1. The firm of Gordon Whitnall and Associates, Los Angeles, believes that a ratio of one square foot of parking area to one square foot of building floor area is the generally accepted minimum standard in business districts.

2. Their record shows them a convenience in large cities. Akron, Ohio, designates various business houses and adds a fee for the service amounting to 5 cents to 10 cents per bill. San Diego, Calif., has contracts with 16 collection agencies in branch offices of the gas and electric companies, drug stores, and real-estate offices. Payment to the collection agency is 6.9 cents per bill.

3. The largest such project is in Massachusetts, where a 5½ mile, 4-lane highway has been surfaced. The rubber admixture was applied at the rate of 14 pounds per ton of hot mix. The rubber was a meltable compound developed by the U. S. Rubber Company.

4. The New York State Department of Public Works applies a light coating of oil on new concrete to make it resistant to scaling because of the chloride salts. The mixture used is a combination of petroleum distillate oil with an SAE rating of 5 and a mineral solvent, such as is used in the dry cleaning. The two are applied at the rate of 17 square yards per gallon. Two applications are generally required.

5. British practice has been to deposit refuse in not more than 6-foot layers, and never to carry the fills above the adjoining ground level. Refuse is expected to reach a temperature of 140°F for 10 to 30 days. Usually a period ranging between one and two years is required before the refuse is "dead."

6. Their use appears to be growing because of the smaller floor space required, and the elimination of pump-priming difficulties. The largest such installation is at the Chelsea pumping station, built by New York City to handle Hudson River water if the Catskill supply should become low. These pumps were supplied by the Peerless Pump Division of Los Angeles. There are five of them, each able to deliver 20 mgd against a 600-foot head.

7. Regulations must be city-wide, according to Raymond B. Tucker, former Smoke Commissioner of St. Louis, Mo. If they do not include the domestic user they are ineffectual, he believes.

8. Elkhorn, Wis., operates a Nordberg 6-cylinder Duafuel engine to supply supplemental power for peak demands, getting the rest of its power from a utility highline. The engine delivers one kw-hr. per 9.77 cubic foot of natural gas, and has a lube-oil consumption of 4,301 kw-hrs. per gallon.

9. No, the state is considered the employer of all governmental employees covered by the act. Each state must sign an agreement with the Federal Government to bring its local-government employees into the program and must include all employees. At present, municipalities cannot reject membership. Employees who are members of an existing retirement system cannot participate in the Old Age Insurance program.

10. Dearborn, Mich., is microfilming all property-description records for the specific purpose of protecting them from an enemy atomic attack.

Send in your suggested questions with the answers on municipal topics for use in this feature. The AMERICAN CITY will make a small payment for each question accepted.

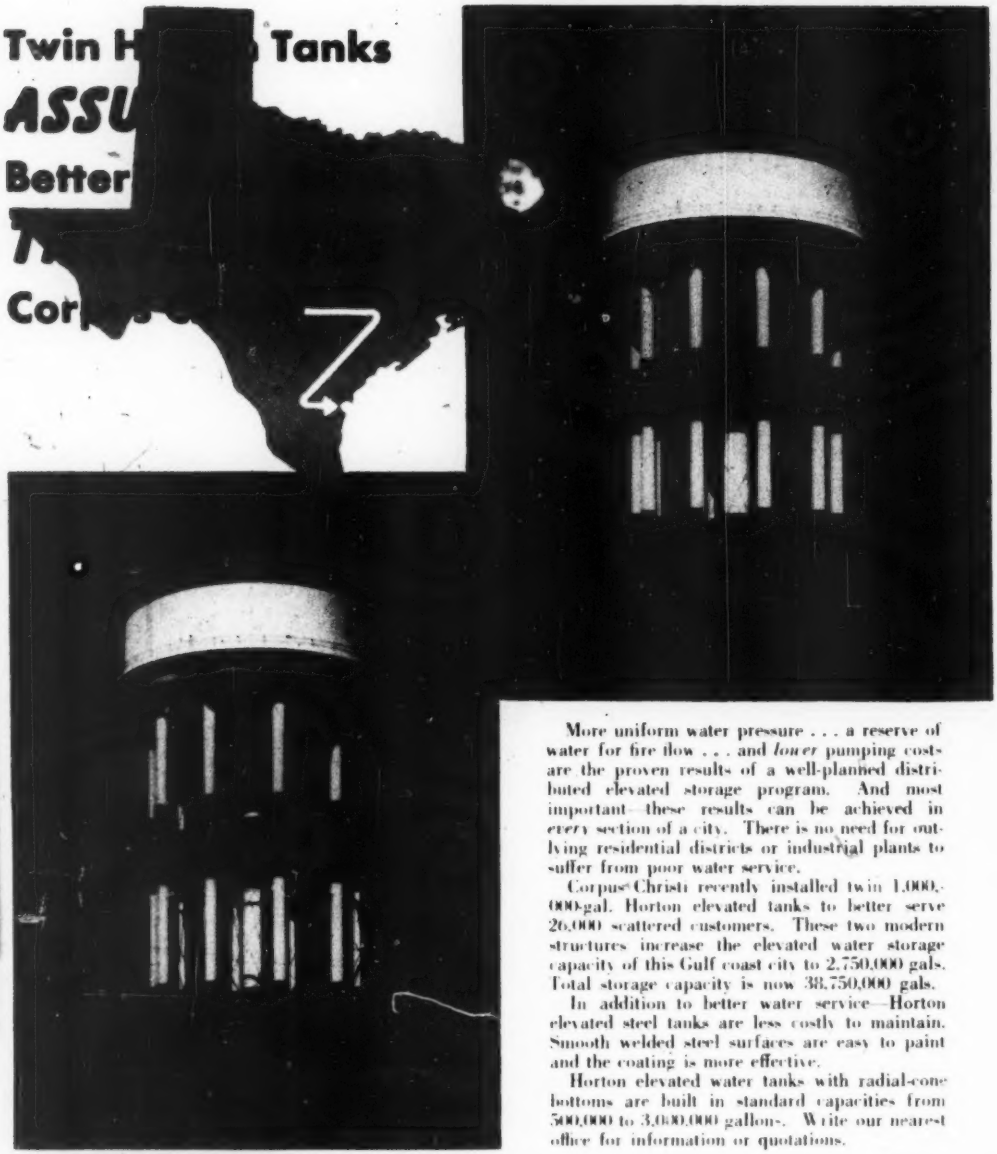
Twin H[illegible] Tanks

ASSU[illegible]

Better [illegible]

T[illegible]

Cor[illegible]



More uniform water pressure . . . a reserve of water for fire flow . . . and *lower* pumping costs are the proven results of a well-planned distributed elevated storage program. And most important—these results can be achieved in *every* section of a city. There is no need for outlying residential districts or industrial plants to suffer from poor water service.

Corpus Christi recently installed twin 1,000,000-gal. Horton elevated tanks to better serve 26,000 scattered customers. These two modern structures increase the elevated water storage capacity of this Gulf coast city to 2,750,000 gals. Total storage capacity is now 38,750,000 gals.

In addition to better water service—Horton elevated steel tanks are less costly to maintain. Smooth welded steel surfaces are easy to paint and the coating is more effective.

Horton elevated water tanks with radial-cone bottoms are built in standard capacities from 500,000 to 3,000,000 gallons. Write our nearest office for information or quotations.

HORTON

WELDED STEEL

STORAGE TANKS

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Chicago 4	2127 McCormick Bldg.	San Francisco 4	1533—200 Bush St.
Cleveland 15	2236 Guildhall Bldg.	Seattle 1	1301 Henry Bldg.
Detroit 26	1801 Lafayette Bldg.	Tulsa 3	1625 Hunt Bldg.
Houston 2	2101 C. & I. Life Bldg.	Washington 6, D. C.	1163 Cafritz Bldg.

Water Supply and Treatment

Winston-Salem Surge Tank

One of the largest surge tanks in the South is now serving Winston-Salem, N. C. This tank, capable of holding 725,000 gallons, is of welded steel, erected by the Chicago Bridge and Iron Company. It rides on the new water-supply line from the Yadkin River. It is 41½ feet in diameter and 67½ feet high, and has an ellipsoidal roof.

Record-High Water Use Forces Enlargements In Spartanburg, S. C.

THE old figure of 100 gallons per person per day hasn't much place in Spartanburg. In September, the people of this city used an average of 435 gallons per day, throwing all of Water Superintendent R. B. Simm's long-range plans out of balance. During the first nine months of last year, the water use went over 1,300,000 gallons per day.

To bring these long-range plans back into balance, the city's water works has under way a $350,000 expansion program. Included in this program are the installation of two new pumps that are capable of delivering a total of 14,000,000 gallons per day. These will bring the plant pumping capacity to 32 mgd. These pumps will be protected by two hydraulic gate valves, and the whole project housed in new quarters.

Filter capacity also is being increased by the addition of a new 3-mg filter. The impounding-reservoir capacity also is being increased by raising the height of the dam.

Water use has risen in Spartanburg from 1,270,000 gallons per day in 1921 to the present figure of over 1,300,000 gallons. In 1921, the city had 50 miles of mains, 241 fire hydrants, and 2,250 metered services. Today it has 222.7 miles of mains, 1,262 fire hydrants, and 12,600 metered services. In 1921, water cost the small user 50 cents per 1,000 gallons. Today it costs him half that figure.

Some Water-Use Data

THE first recorded rainmaker was the Prophet Elijah, who put his head between his knees and sent his servant to look at the sea seven times. This ended a drought in Israel 2,900 years ago.

Municipal use of water in the United States has risen from 2,000,000,000 gallons daily to over 12,000,000,000 gallons in the last 50 years.

Sewage flow will tell of wasteful water use. A dilute sewage indicates a study would be helpful. If a water-saving campaign produces a 3% saving or better, it is worth the effort. Sixty percent of the manufacturing industry does not reuse its water and probably should.

Drinking beer is no way to save water. It takes 470 gallons to manufacture one barrel of beer.

Air-conditioning equipment with a capacity of 3 tons or more is a definite drain on the water supply unless the water is reused through cooling towers, condensers, or other equipment.

These points were explained by Harry Wilson, Assistant Civil Engineer, Department of Water Supply, Gas and Electricity, New York City, in a paper discussing water conservation delivered before the annual Congress of the American Public Works Association, which held this meeting recently in Detroit.

Get Busy on Applications to Build in '52

DON'T blame the suppliers or the government if you run into trouble getting equipment for the water improvements you plan for 1952. In today's economy, you need more than money to get this equipment. It must be proved that the project fills a real lack in the nation's defense structure.

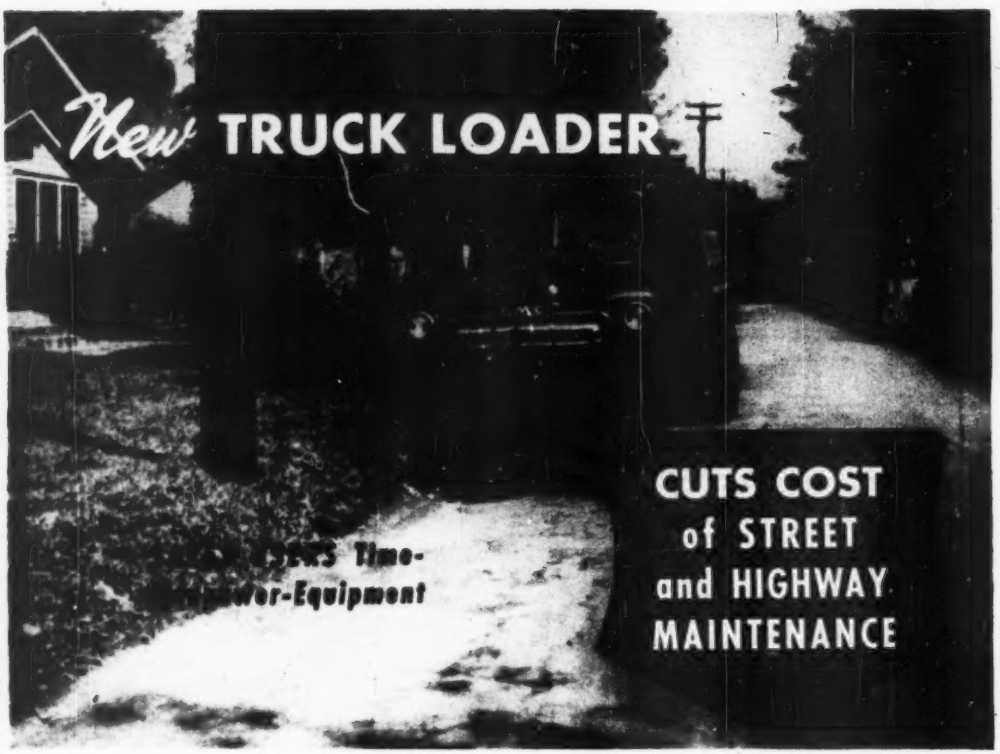
So if you plan to build in 1952, get those applications in early. You must prepare four copies of Controlled Materials Plans form known as CMP-4; you can get them from any field office of the United States Department of Commerce. The department maintains such offices in most of the larger cities.

But don't make the preparation of these forms perfunctory. You are competing for materials in a market where there aren't enough to go around. If the project is important, say so, and tell why. If the lack of it is going to disrupt industrial life in your community, say so, and tell why those industries must be supplied. The water industry has a bad habit of lumping both domestic and industrial use of water together, and expressing the demand in gallons per person per day. Better would be figures such as the 18,000 gallons of water needed per ton of ingot steel produced, the 420,000 gallons required to turn each ton of ingot steel into fabricated products, or the 125,000 gallons required to test each airplane engine before its installation.

Moreover, make your figures accurate. The men heading the Controlled Materials Plan in the Water Resources Division have had long experience in the field. At present, it is their policy to frown on any blanket approval of some percentage of the amount of materials you need. If the project is necessary, they will help you to see that it is built soundly.

But if you need a project, don't feel that you can't afford it. Prices have no way to go but up. If the water improvement is necessary to the welfare of your community and important to the defense of the country, you had better build it and figure out a water-rate schedule that will pay for it. If you try to put the money in a sinking fund, to build later, "when prices go down," the present galloping inflation probably will shrink the value of the money up as fast as you put it away.

So if you need that improvement get the forms in, get them in promptly and accurately, and document them with the most persuasive information at your disposal to show why not only your community, but the nation generally, needs the water. Don't even think about first-quarter applications. They should have been submitted by now. Do get busy on the applications for the rest of the year.



THE NEW Holmes-Owen Loader offers a very practical solution to the problem of today's increasing cost, on street and highway maintenance jobs. The installation of a self-loader reduces the cost of such operations for with this driver-operated unit, one man now does the work of several. The versatile one-man operation of a loader-equipped truck, not only speeds up material handling but substantially reduces the cost per ton handled. It saves time, labor and equipment by permitting the truck driver to do his own loading, hauling, and unloading without extra help or the use of more costly equipment. The new truck loader is today being profitably used by states, municipalities, contractors and numerous commercial and industrial firms. Write factory today for details on this unit which is unsurpassed for handling stock pile materials, snow removal, cleaning-up and dozens of other practical uses.

Manufactured by
Makers of HOLMES WRECKER Equipment

ERNEST HOLMES COMPANY
Chattanooga, Tennessee

Permits DRIVER to LOAD, HAUL, DUMP, Do Light DIGGING, Grading, Cleaning-up

Street Cleaning and Snow Removal

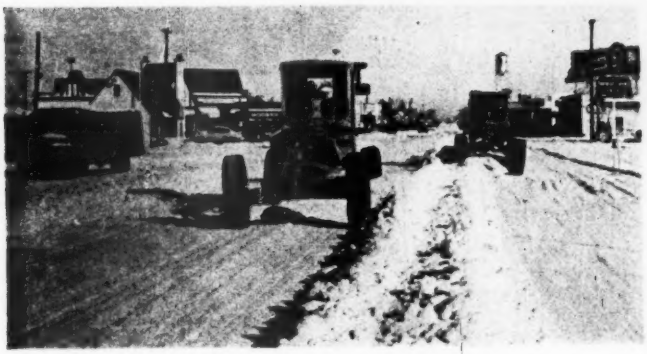
A German Version Of the Leaf Blower

This mechanical gutter-sweeper is patterned after the leaf blower now so popular in this country. Its power broom, which helps loosen dirt and leaves, is similar to the broom built into the leaf blower in Rochester, N. Y. The position of the blower chute can be controlled mechanically.

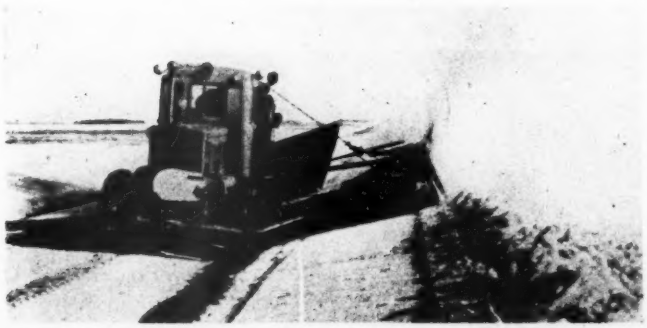
PHOTO COURTESY WALTER KAUPERT, ENGINEER, LUBECK, GERMANY

Center Windrows in West Memphis, Ark.

Snow being windrowed to the center of the wide main thoroughfare of West Memphis, and with no traffic tie-up.



No Need for High Snowbanks



A blower at the end of the wing plow provides the answer to those snow-trapping windrows that so often cause trouble in the winter. This Caterpillar diesel No. 12, owned by Polk County, Minn., carries a V-plow and wing and Ulrich snow blower for clearing snow on a country road near Crookston, Minn. The blower attachment is made by Ulrich Products Corporation, Roanoke, Ill.

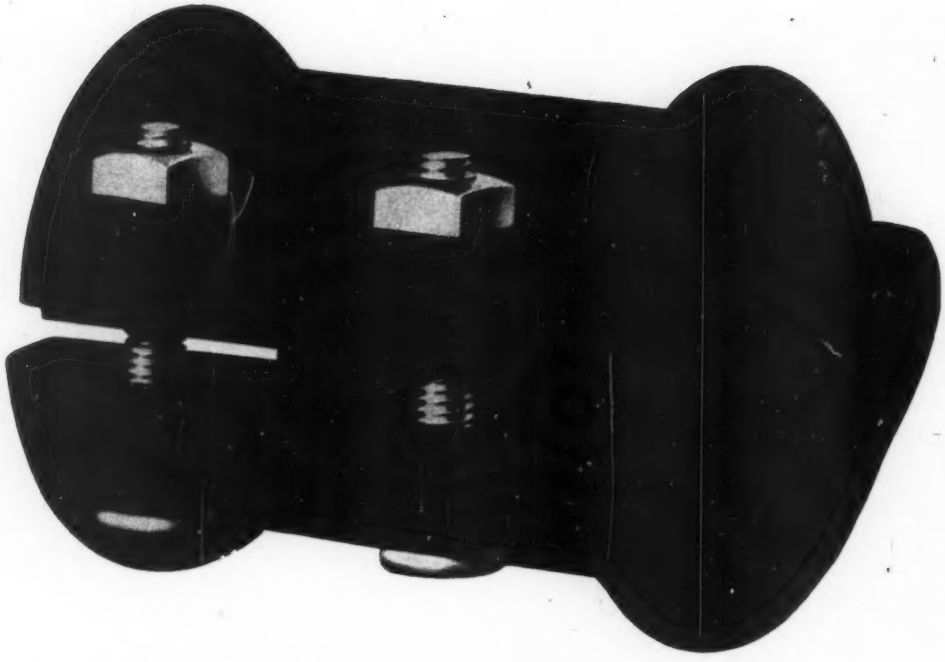
How Catch-Basins Are Cleaned in Irvington, N. J.

FOR cleaning catch-basins, we use a hoisting unit with mechanically controlled boom and Hayward Orange Peel bucket mounted on a Ford chassis with a 4-yard body. This unit, which is also used for cleaning sanitary sewers, was manufactured for us by Gar Wood Industries, Inc., of Wayne, Mich., according to our specifications. The company has since gone into mass production of this unit.

We have 2,000 catch-basins in Irvington, and our schedule of cleaning varies in accordance with the season. During most of the year, the basins are cleaned not on schedule, but on observation. When construction work is in progress, and also in the industrial districts, the basins must be cleaned more frequently. In the fall, when leaves accumulate in the basins, our average is necessarily stepped up. During the three fall months, it is necessary to clean most of the basins at least once. As we average about 30 basins per day, we just about finish the job.

Our basins are built with large sumps and we seldom have a stopped-up basin. Most of the material draining off the streets is grit from pavements. As all our streets are paved and permanently curbed, we do not have any earth wash to contend with. The cleaning unit we use is self-sufficient, and we do not use any other equipment. The unit is operated by an operator and one helper.

I. J. CASEY, JR., *Town Engineer*
Irvington, N. J.



EMERGENCY PIPE CLAMP

SKINNER-SEAL

PIPE LINE CLAMP

During the present critical shortage of pipe, nothing compares with these clamps for repairing corrosion leaks and splits in services as well as mains—for all sizes of steel and cast iron pipe, ½" to 12". Standard of the industry for half a century.

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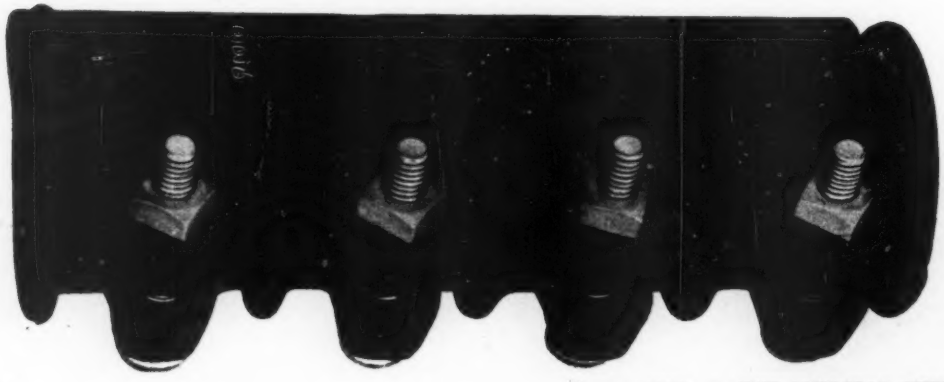


Sewerage and Sewage Treatment

Faster, More Economical Sewage Treatment

THE capital investment can be smaller, and the treatment just as thorough when the design is built around an Infilco Aero Accelator. These facts were the findings of Professor Theodore Jaffe, of the Department of Civil Engineering at the University of Florida; he explained them before the Federation of Sewage and Industrial Wastes Associations at its annual meeting held recently in St. Paul, Minn.

Professor Jaffe conducted tests of the Accelator as a single unit, providing primary treatment with and without chemical coagulation and secondary treatment.

The Accelator uses an upflow design. Screened raw sewage and compressed air enter at the bottom center of the tank and are brought into intimate contact with each other by a "roto-Disperser." The sewage-air floc mixture is directed upward in a central draft tube and flows over a concentric ring and down into the "return-flow zone." The ring is adjustable to control recirculation. In the return-flow zone the clarified liquor rises from the mixed liquor and the active floc settles. This entire floc is then returned to meet the incoming sewage.

According to Professor Jaffe's studies, the unit can operate as an activated slurry-type plant; it can act as a biochemical plant; it can provide chemical and air treatment in line with the modified Daytona Beach process, or provide straight chemical treatment. For pilot-plant studies, he used a unit that provided 3.8-hour detention at 10 gpm, treating sewage with 125-ppm BOD average. Peak loadings were 250 ppm; the minimum was 10 ppm.

The activated-slurry treatment meant that primary settling and air activation take place in the same unit. The study showed that a biological floc can be produced like activated sludge.

The biochemical treatment makes use of calcium carbonate sludge, a by-product of the water-softening process. The study covered the use of air at the rate of 4 cubic feet per minute during the day and 2 cubic feet at night. When the carbonate was added at the rate of 200 ppm, it produced 91% reduction in BOD and 95% reduction in suspended solids. At 100-ppm carbonate, the reductions were 95% for both. At 50-ppm carbonate addition, the reduction was 87% in BOD and 92% in suspended solids. These tests ran over a period of 44 days. The process had a weighting effect on the floc. It produced a more rapid uniform settling and made the air requirements somewhat lower.

The tests also covered biochemical treatment, with the air input restricted to keep the dissolved oxygen of the mixed liquor at a predetermined level of 1 ppm so that the liquor was always in an aerobic condition. With 75-ppm calcium carbonate addition, the unit handled twice the design capacity and produced a high-quality effluent with only two hours of detention time.

The modified Daytona Beach process required 0.13 cubic feet of air per gallons of sewage and produced a reduction of 82% BOD at design rate. At twice the design flow, 81% of the BOD was removed with 0.10 cubic feet of air per gallon of sewage.

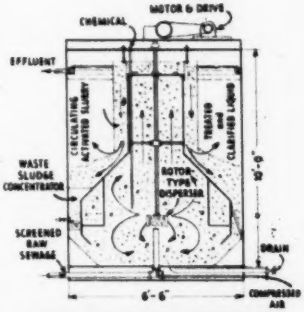


FIGURE 1. INTERIOR OF PILOT PLANT UNIT

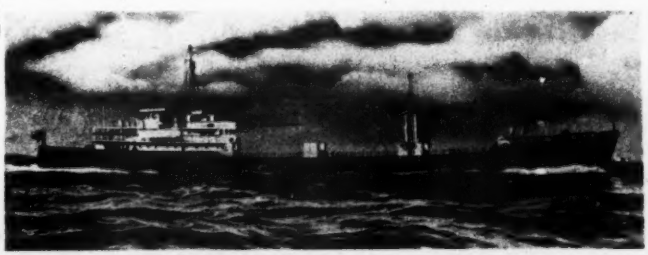
New York Gets Larger Sludge Tanker

NEW YORK CITY'S Public Works "navy" had another addition to its fleet when the new 283-foot, diesel-powered, twin-screw vessel, *Owl's Head*, went off the ways of the John H. Mathis Company at Camden, N. J. It joins a fleet of three similar tankers which transport liquid sludge from five of the city's seven modern sewage-treatment plants to a deep-water dumping area about 12 miles from the shore. Katherine Ann Zurmuhlen, 19-year-old daughter of Public Works Commissioner Frederick H. Zurmuhlen, christened the vessel with a bottle of champagne.

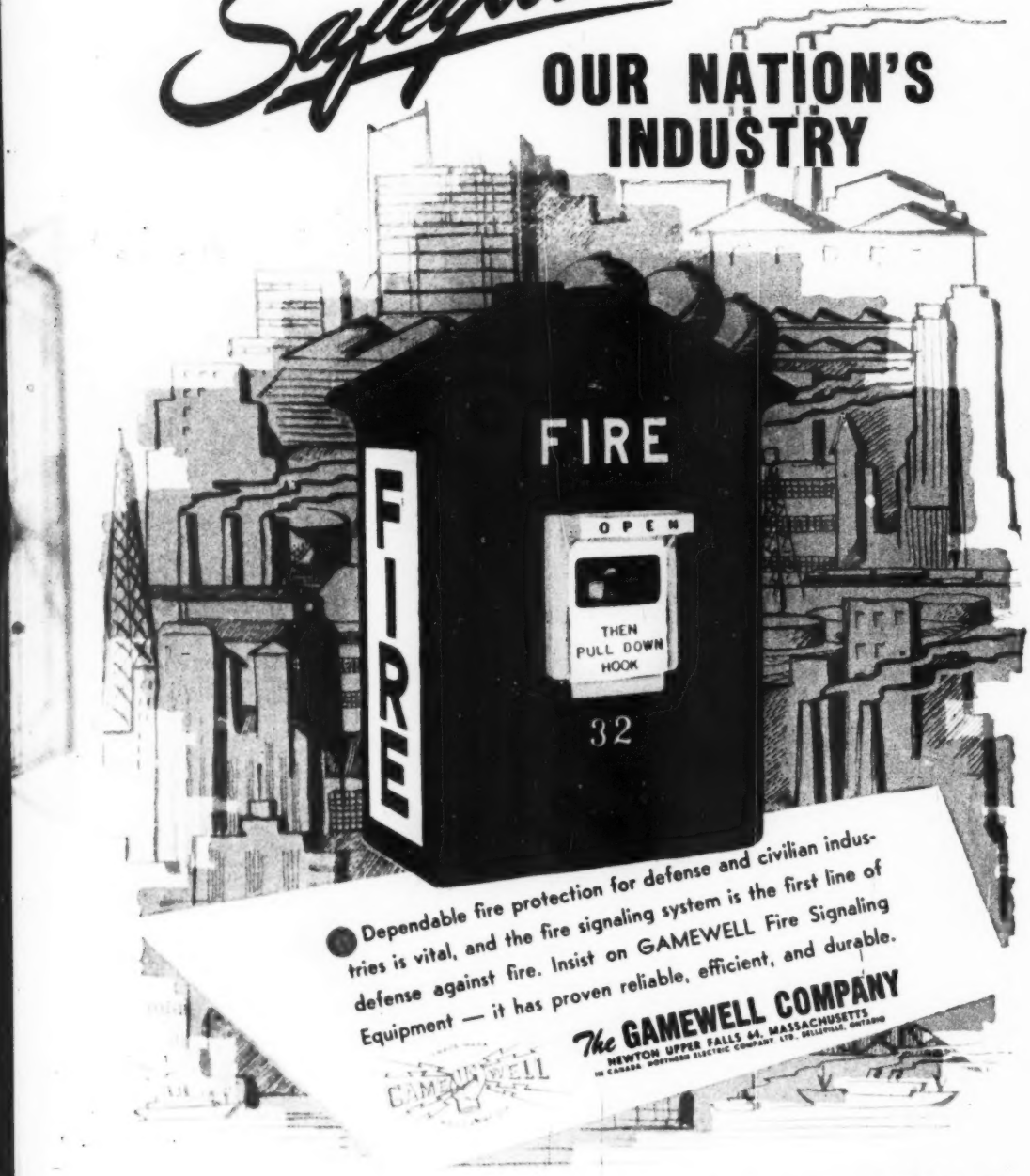
The new vessel can hold 1,900 long tons and has a volume capacity of 68,500 cubic feet. It is 283 feet long and has a 45-foot beam and a 12-foot design draft. Like the other three, it can unload the sludge by gravity, possible by placing buoyancy spaces beneath the sludge compartments so that the sludge level is always above the water line. The tanker is powered by two direct-reversing diesel engines, each rated at 700 hp.

The disposal of sewage sludge at sea is not a common practice, followed only by Providence, R. I.; the Passaic Valley Sewerage Commission of New Jersey; the Elizabeth Valley Joint Meeting of New Jersey, and by New York City. New York City is one of the few that operates its own sludge vessels. The increase in the fleet reflects the increase in the sewage-treatment facilities being constructed by the city.

Loading time varies at each of the plants, but averages from 1½ to 2 hours. The average round trip is about 68 miles and requires from 6 to 7 hours. Five crews of 10 men each operate the vessels on two or three 8-hour shifts.


An artist's sketch of the new tanker *Owl's Head*.

Safeguard OUR NATION'S INDUSTRY



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Public Safety

"Handie-Talkie" Units At Chicago Warehouse Fire

A MOCK atom-bomb attack in Evanston, Ill., was followed by a real fire in near-by Chicago that caused $1,500,000 damage. Motorola, Inc., had loaned four "Handie-Talkie" 2-way radio units to Evanston for the civil-defense demonstration, in which Chicago police and fire forces were active participants.

Units See Impromptu Use

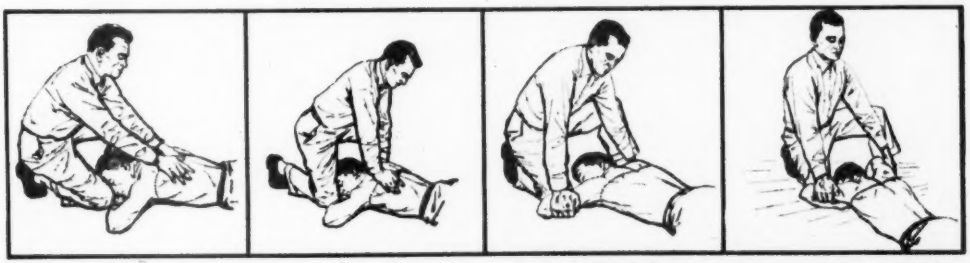
Chicago Fire Marshal Anthony J. Mullaney, who directed the test, still had the radio units with him when a great warehouse fire broke out on La-Salle Street in Chicago. He kept one of the 2-way radios with him to direct operations. Another was placed on a Chicago fireboat that was fighting the blaze, and the other two were placed on the far side of the burning building. The Chicago *Daily News* reported that Chicago's Mayor Martin H. Kennelly was sufficiently impressed by the use made of the radios to remark that the city would consider buying some for both the Fire and Police Departments.

Civil Defense Director of Evanston, Ill., George Julin; Chief Deputy Fire Marshal Anthony J. Mullaney, Chief of the Chicago Civil Defense Corps; Evanston Fire Chief Ed Newell, and Mayor G. S. Ingraham of Evanston turn their attention to one of the Motorola "Handie-Talkie" portable radiophones used in the mock atom-bomb test.

Better Artificial Respiration

AN IMPROVED method of artificial respiration, known as the back-pressure, arm-lift, has been adopted by the American National Red Cross and the armed services. It is a European method which permits greater exchanges of air and can be administered without undue fatigue to the operator.

The Red Cross will include the new method, illustrated here, in first-aid and life-saving courses as soon as possible. Three million supplements on the new system are being printed for inclusion in its first-aid and water-safety textbooks. The supplement will be available at no charge through American National Red Cross chapters (headquarters, Washington 13, D. C.).



Left to right: To start the cycle the operator places his hands on the victim's back so that his thumbs just touch and the heels of his hands are just below a line running between the victim's armpits. The operator then rocks forward slowly, keeping his elbows straight, until his arms are approximately vertical, exerting steady pressure on the victim's chest. Then he rocks backward, while slowly sliding his hands to the victim's arms to a point just above the elbows. Continuing to rock backward, he raises his arms until resistance and tension are felt at the victim's shoulder. The operator then drops his arms and thus completes a full cycle. The cycle is repeated 12 times per minute, the expansion and compression phases being of equal length, and the release periods of minimum duration.

Better planning by comparison

with Fairchild's 2-way Mapping Service

BY COMPARING a precise photomap on one hand with an atlas of well indexed contour maps on the other, your city engineers and other planning groups can make accurate decisions with a minimum of time and expense.

THE EFFICIENCY of the Fairchild 2-way mapping service has been proved by several city and county governments. Recent examples are Cincinnati and Hamilton County, San Diego, Tacoma, West Springfield, Mass., Alexandria, Va. and others. Now, nearly every day, these communities find an office solution to some question that formerly required sending a party into the field. These progressive communities are saving time and money—they're getting accurate answers without arousing unnecessary concern on the part of property owners.

MANY CITY ENGINEERS have benefited from Fairchild's consultation service—have been able to map city districts in the order of greatest need—and eventually secure 2-way maps for the entire area as funds become available.

REQUEST FURTHER INFORMATION on how your city can plan wisely for tomorrow. Address Fairchild Aerial Surveys, Inc., 224 East 11th Street, Los Angeles 15, Calif., or 21-21 Forty-first Avenue, Long Island City, New York.

FAIRCHILD

AERIAL SURVEYS, INC.

PHOTOGRAMMETRIC ENGINEERS

Refuse Collection and Disposal

More on Grinders in Los Angeles

LOS ANGELES is 'the gainer in eight ways whenever any of its residents installs a food-waste grinder, according to W. A. Schneider, Director of the city's Bureau of Sanitation. The advantages are the following:

Food-waste disposal is immediate, sanitary, and convenient, taking place at the point of origin before it becomes "garbage."

The fly-breeding and rodent-attracting garbage can is eliminated.

No garbage-collection service is required at the household.

The householder's duties are eased.

The householder no longer has to spend money for a garbage container.

It eliminates feeding of such garbage to hogs, objected to by many from a health standpoint.

It eases the service load on the Public Works Department by reducing the garbage-collection fleet.

It releases funds ordinarily spent for garbage collection for other purposes.

It allows recovery and utilization of the food wastes after treatment as organic fertilizer or gas fuel.

These points are particularly applicable to Los Angeles since the city collects only organic garbage and noncombustible rubbish. It does not collect tree trimmings, paper, or other burnable refuse. Mr. Schneider discussed these advantages before the annual meeting of the American Public Works Association, held in Detroit.

He pointed out, in addition, that Los Angeles was one of the first cities to use grinders. At present, he estimates that about 5% of all dwellings are equipped with the devices, but, under conditions today, feels it inadvisable to require their installation in every dwelling. The present policy is to retain the truck collection and allow the grinders to lessen the load on it gradually.

No problems exist when utilizing the sewer system for the pulverized garbage. The ground food solids will not shoal in the sewers. Their light, flocculent nature will allow any sewer system that operates correctly to transport the pulverized food wastes as well as the sewage. These macerated wastes are easily removed in the treatment-plant settling basin; in fact, some evidence indicates that settling is improved by the combined garbage-sewage flow. Food wastes and sewage are alike, hence the mixture of the two wastes is digestible and the added gas generated has economic value. The dual disposal will also result in increased production of sludge fertilizer.

If there were a grinder in every home in a community the total sewage flow would be increased approximately 1% to 2%, Mr. Schneider said. Suspended solids in the combined flow would increase about 33% to 50%. Settling-tank requirements would not be affected materially, but digestion and drying requirements would be increased. The BOD of the incoming sewage would be increased between 15% and 30%. Grit would increase approximately 40 pounds per ton of garbage, but the particle size would be smaller.

Minor Problems

Until very recently, there has been no evidence of problems created by the ground garbage in the sewerage system of the city. Actually, the effects, if any, were believed to be beneficial since the garbage appeared to have a mild scouring effect, reducing the deposits of slimes and grease clinging to the sides of the collecting sewers. However, in one location where a number of apartment houses, in which every apartment equipped with a garbage grinder, are connected near the upper terminus of an 8-inch sewer with small flow and constructed upon a relatively flat grade, maintenance forces have observed that some of the heavier particles have settled out or clung to the sides of the sewer, and odors have been noticeable.

Mr. Schneider believes that this phenomenon can occur only at the upper ends of a relatively few small local sewers constructed on flat grade with low flow. In the case described here, it can be corrected by more frequent flushing of the upper portion of the sewer.

Another observation is that a heavier blanket of scum is present in the wet well of a pumping plant receiving this flow, because of the finely ground garbage floating on the sewage. This has caused no serious operating problems.

On July 21, 1936, the Los Angeles Board of Public Works authorized that ground garbage be discharged into the sewers provided that it was ground to meet the following requirements:

At least 40% shall pass a No. 8 sieve.
At least 65% shall pass a No. 3 sieve.

Sieves are U. S. Standard, and percentages are based on drained weights.

In April 1949, the Board revised its regulations to permit the use of grinders in restaurants, cafes, and similar food-handling establishments. However, their use is still not permitted for the disposal of "market refuse." The Board's experience has confirmed the belief that the grinders provide the most sanitary and nuisance-free food-waste disposal now available.

Michigan City, Ind., Makes Refuse Disposal Profitable

An International TD-14A with Drott Bullclam spreads a 3-foot sand cover on 150 cubic yards of settling refuse.

LAST year Michigan City paid a private contractor $20,000 to collect garbage and spent another $10,000 for "rent" on a dumping area. But this year the council members decided to see what could be done about reducing this $30,000 annual outlay.

First, they bought an International TD-14A crawler tractor equipped with a 2-yard Drott Bullclam shovel. Next, they purchased two used trucks. Without much difficulty, they found a landowner who was delighted to have his marshy property filled by the city without cost to him.

As 1951 passed the three-quarter mark, council members found they will be able to finish out the year with a neat savings in the refuse department. And since the property being filled will eventually be the site of an industrial building, they can foresee the day when the city taxes on this installation will far exceed those realized on the formerly worthless marsh.

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Cleco Paving Breakers hit hard and fast. They produce more work per man per hour and cost less to maintain than any other demolition tools in their class.

Write for Bulletin RC-949

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Street Construction & Maintenance

How to Avoid Poor Seal Coats

FIRST, select an asphalt the viscosity of which is not too low. Asphalts with low viscosity do not retain the cover material if the road is opened to traffic soon after the cover is spread.

Next, avoid too light an application of asphalt for the size of cover material used. Scrimping on the amount of asphalt will result in failure to hold the cover. Conversely, don't go overboard with the asphalt and bury the aggregate.

Watch out for too soft a stone, which will pulverize smooth under traffic. And keep an eye on the weather. Cold, damp weather will prevent quick adhesion of the asphalt to the aggregate. Heavy rains also will cause you to lose cover aggregate.

These were points made by Harold L. Tilton, Manager of the Asphalt Department of Shell Oil Company, of Chicago, Ill., at the recent Bituminous Roads Institute held at the University of Wisconsin. Mr. Tilton recommends the use of cutback asphalts graded at RC-3, MC-5, and RS-1, with high viscosity, for single-seal coatings, and pointed out that MC-5 allows more time for covering than do either of the others. For multiple-seal coatings, he recommended RS-1 and stated that a cover material ranging from ½ inch to ⅜ inch produces a pleasing, non-skid surface. Larger sizes are even more non-skid, but cause a rumbling sound to be heard by motorists as they drive over such a pavement.

Concrete Short Course at Georgia Tech

THE second annual quality concrete short course will be held at the Georgia Institute of Technology, Atlanta, February 4-6, 1952. Intended to bring members of the construction industry up to date on the design and control of concrete mixtures, placing, forms, and curing, the course offers laboratory participation and comprehensive instruction on the design and control of concrete mixes, concrete placing, and form work.

There will be two sections in the course. One section will appeal to ready-mix operators, engineers, architects, and contractors. The other section will interest concrete-masonry and pipe manufacturers.

Registration

The registration fee of $15 includes a ticket to the banquet, which takes place February 5 in the Tech dining hall. Additional tickets for the ladies or other guests may be purchased for $3 each.

It was also pointed out that hotel reservations should be made directly with the hotel of one's choice as far in advance as possible. Dormitory-styled rooms on and adjacent to the Georgia Tech campus may be obtained by writing to the Men's Residence Halls, 727 William Street, NW., Atlanta, Ga.

In addition to Tech President Blake R. Van Leer and the staff from the School of Civil Engineering, there will be among the instructors the following representatives of national organizations: R. E. Copeland, Director of Engineering, National Concrete Masonry Association, Chicago; John G. Hendrickson, Director of Engineering, American Concrete Pipe Association, Chicago, and Carl A. Menzel, Manager, Housing and Products Bureau, and E. C. Wenger, Manager, Conservation Bureau, of the Portland Cement Association, Chicago.

All registration inquiries should be addressed to R. E. Eskew, Acting Coordinator, Short Courses and Conferences, Engineering Extension Division, Georgia Institute of Technology, Atlanta, Ga.

THE ANNUAL INDEX

listing by subjects and by cities the articles and items published in *The American City* for the 12 issues for 1951 will be available without charge to subscribers for the magazine. Address requests to 470 Fourth Ave., New York 16, N. Y.

City Engineer George Shepard inspects one of the sidewalk-curb combinations.

Sidewalk Forms Curb

THERE will be no separate curb as such in the street-improvement program now under way in St. Paul, Minn., in front of the Minnesota Capitol building. Instead, City Engineer George Shepard has designed the edge of the sidewalk to form the curb, thus avoiding possible maintenance difficulties between the curb and sidewalk.

The gutter apron, in this case, is laid with brick. In most cases, the city uses a concrete slab.

Nashville, Tenn., Surfaces 40,000 Sq. Yds. in a Day

APPROXIMATELY 2,000,000 square yards of streets received a new surface in Nashville last summer, with 40,000 square yards being completed in one 8-hour day. This record-breaking run was completed on a Sunday and covered the heavy-traffic area in the center of the city.

City forces performed the resurfacing work, using the inverted-penetration method, applying asphalt emulsion and pea gravel for cover coat. A new city-owned Littleford distributor applied the emulsion at the rate of 0.30 gallon per square yard. The pea gravel was applied at the rate of 12 pounds per square yard. All the work was done without closing off any of the streets and caused little complaint from merchants, pedestrians, and motorists.

The paving program was conducted by the Department of Public Works, under Warren A. Coolidge, Director.

You can't beat

SANITATION HTH

CONTINUOUS CHLORINATION

STERILIZATION OF NEW MAINS

ALGAE CONTROL IN RESERVOIRS, ETC.

EMERGENCY CHLORINATION

In every water supply system, large or small, Sanitation HTH is a proven agent for maintaining safe water conditions. It is an easy-to-use, safe source of chlorine for regular water treatment. It makes an effective solution for the sterilization of new mains, pumps, standpipes and other supply equipment. It is widely used for algae control and for sterilization of reservoirs, basins, tanks, wells and flumes. And of vital importance, HTH should be on hand at all times for emergency chlorination in case of abnormal demands on the water supply system caused by drought, fire, flood, power failure, etc.

Wherever chlorination is needed, you can depend on Sanitation HTH. Dry, free-flowing and granular, Sanitation HTH is safe and easy to store and apply. Get complete information on *all 4 important uses* and dosage recommendations in the booklet, "Hypochlorination of Water." Write for your copy today. Mathieson Chemical Corporation, Baltimore 3, Maryland.

Sanitation HTH is available in cases of nine handy 5-lb. cans and in 100-lb. drums.

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SERVING INDUSTRY, AGRICULTURE AND PUBLIC HEALTH

Airports and Aviation

Puerto Rico Builds "International" Airport

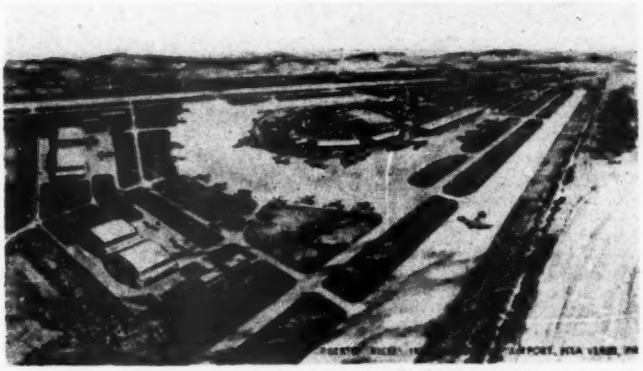


PHOTO COURTESY HAMILTON WRIGHT, NEW YORK CITY

An artist's concept of how the new airport will look.

PUERTO RICO is building an airport—big enough to handle the largest of today's modern commercial airplanes.

The old Isla Grande Airport, inside San Juan—considered one of the busiest in the Latin Americas—handles an average of 1,000 passengers a day at present. The Isla Grande runway is only 5,200 feet long and does not permit landing of Stratocruiser-type aircraft. The International Airport will have a runway over 1½ miles long. It should be in operation by 1953.

Get Airport Zoning Regulations Early

IF YOU don't, you won't be able to protect the vital airport approaches and may ruin the usefulness of an otherwise well-engineered field. This was the observation of Benjamin E. Beavin, Sr., consulting engineer, Linthicum Heights, Md., expressed at the recent meeting of the American Society of Civil Engineers, held in New York City.

Airport zoning, ideally, should start before the site for an airport is selected, he stated. Once this has been done and the positions and elevations of runway ends determined, zoning of the airport, purchasing of land in approach zones, the securing of avigation (aerial navigation) easements, or a combination of all three, should be undertaken.

Avigation Easements

A comparatively recent development, avigation easements offer a means of controlling airport approaches and of reimbursing property owners for the damages suffered, without resorting to outright purchase and subsequent eviction of families from homes to which they may be deeply attached, or from farms or business locations providing their livelihood. Avigation easements should be resorted to only when zoning imposes real hardship or when they may be obtained at less cost than outright purchase would entail. Where political boundaries or lack of enabling legislation make zoning impracticable, an easement may be the only possible solution.

Features of Map

The understanding and successful administration of zoning ordinances can be further improved by simplfied airport-zoning maps. Mr. Beavin stated that desirable features for a zoning map include: (1) airport reference point and runway ends fixed by state coordinates; (2) horizontal limits of imaginary surfaces fixed by radial distance in feet from the airport reference point, wherever possible; (3) the elevation of all runway ends referred to mean sea level; (4) the number of imaginary surfaces reduced to a minimum with altitudes referred to mean sea level; and (5) ground contours, and landmarks to be shown in dashed lines.

Even with the best airport-approach protection, vigilance and administrative effort to prevent encroachment of growing trees and man-made hazards will always be required. It is not believed that any of the existent airports live up to their ordinances completely. By doing so, however, safety features of the airport can be enhanced, the capacity of the port maintained, early obsolescence averted, and the capital investment protected.

Miami Airport to Get High-Intensity Lighting

MIAMI International Airport is installing high-intensity lighting on its new 9,400-foot runway and the 8,400-foot runway previously extended. Both runways are east-west and make up a dual system with ILS being moved to the right-hand east runway. The complicated taxiway system is to be illuminated also. Line Material Company will supply 185 high-intensity runway lights and 760 taxiway lights. This is one of the largest runway-lighting installations, and probably the largest taxiway-lighting plan, in the country. The order includes all supplementary controls and equipment.

The project is being supervised by A. B. Curry, Director of the Dade County Port Authority. Mr. Curry is chairman of the Airport Use Panel and C.A.A.'s Airports Advisory Committee. He also is president of the Airport Operators' Council and a member of the American Association of Airport Executives.

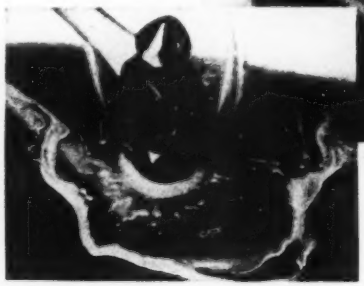
The airport carries a large volume of traffic. From December to April, flight operations are actually heavier than at New York, Washington, or Chicago, usually considered to be the biggest-volume ports. The airport handles the largest volume of foreign passengers and cargo in the country.

Twenty C.A.B.-approved scheduled airlines and over 37 irregular air carriers operate through the airport. Four passenger terminals and widely separated cargo and maintenance facilities are accessible by means of this extensive taxiway system.

STRIKE THIS BLOW FOR LOWER MAINTENANCE COSTS . . .

HAMMER TEST: Put a lump of *Texaco Marfak* about the size of a walnut on a smooth, solid surface. Then hit it as hard as you can with a good sized hammer. See how *Texaco Marfak* cushions your blow, does not splatter. That's because *Texaco Marfak* is both adhesive and cohesive. It clings to the surface and *holds together* — a dramatic demonstration of how it stays in the bearings and protects chassis parts under the pounding of the roughest service. ▶

MORE THAN 400 MILLION POUNDS OF MARFAK HAVE BEEN SOLD!



◀ **TRY the "hammer test" with ordinary grease.** Stand back and hit it! Note how it splatters, fails to hold together — proof that ordinary grease soon pounds out of chassis parts, leaves them unprotected, shortens their life. Fleet owners everywhere agree that *Texaco Marfak* gives the best protection under all conditions.

Make the famous *Texaco Marfak* "Hammer Test" as described above. Note how *Texaco Marfak* cushions your hardest blows. The wonderful cohesive properties of *Texaco Marfak* prevent it from splattering like ordinary grease.

So it is in your chassis bearings. *Texaco Marfak* withstands the poundings of roughest roads . . . stays in the bearings for extra hundreds of miles . . . seals out dirt and moisture. *Texaco Marfak* stretches parts life because its tough, tenacious lubricating film gives better and longer lasting protection against wear and rust. Your maintenance dollars go farther.

In wheel bearings, use *Texaco Marfak Heavy Duty*. It seals itself in, seals out dirt and moisture for longer lasting protection. Will not leak onto brakes. No seasonal change required.

Economies for Sewage Disposal Plants

Use *Texaco Rustproof Compound* to prevent rust and prolong the life of tanks, piping, manhole covers, distributor arms, etc. *Texaco Rustproof Compound* forms a soft, self-healing, waterproof film that gives longer, better protection. Easily applied by unskilled labor, and requires no excessive preparation of surface.

Let a Texaco Lubrication Engineer help you simplify your maintenance lubrication . . . keep your equipment on the job and out of the repair shop. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York 17, New York.

TEXACO Lubricants and Fuels

FOR ALL CONTRACTORS' EQUIPMENT

Faithfully yours 50 *for Fifty Years*

TUNE IN . . . TEXACO STAR THEATER starring MILTON BERLE on television every Tuesday night. METROPOLITAN OPERA radio broadcasts every Saturday afternoon.

Get What You Want—No Charge!

Please check over the list of interesting free catalogs on this and following pages. To obtain the literature you want, write directly to the manufacturers at the addresses given. If you prefer, you may circle the identifying numbers on this coupon and mail to THE AMERICAN CITY, *470 Fourth Ave., New York 16, N. Y., and we will see that catalogs are sent to you without expense or obligation.*

1/52

314	315	316	317	318	319	320	321	322	323	324	325	326	327	328
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359	360	361	362	363	364	365	366	367	368	369	370	371	372	373
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Name ..... **Position** .....

Address .....

Pipeline Seal Clamps

314 R. H. Baker & Co., Inc., 2040 E. Slauson Ave., Huntington Park, Calif., on request will send a copy of its *C-1950 Baker Catalog*. The Baker CirclSeal clamp has intermeshed teeth on a specially compounded rubber gasket, its HiPressure lug gives the cushioned squeeze. It is a fully cushioned wrap-around clamp for your pipe. The use of this equipment for solving full breaks in asbestos-cement, cast iron, and steel pipe lines avoids the shut down needed for repairs, and caulking-in leaded fittings in a wet ditch.

For Fire Protection, Use Salvage Covers

315 The Fulton Bag & Cotton Mills, Atlanta 1, Ga., produces Shuredry Green-Bak salvage covers which, it reports, saves fire victims thousands of dollars because they are resistant to water penetration and seepage, and are pliable and easy to handle. Triple-strength Tarps are used for garbage truck covers and protection of equipment and supplies exposed to weather.

For Refuse Collection

316 The White 3000 garbage and refuse collection truck saves time, reduces cost, and steps up municipal service, states The White Motor Co., Cleveland 1, Ohio. There is cab room for the collector and two helpers, the equipment's maneuverability saves driver and driving time, and it permits larger bodies and longer routes.

Mower Cuts any Height Of Grass or Weeds

317 The Pearce Airlift rotary power mower cuts any height of grass of weeds, states the Pearce Corp., 146 E. Highland Ave., Milwaukee 2, Wis. The Airlift cutter creates suction that lifts low-lying or matted growth up into the path of the cutter, where they are cut cleanly and evenly. Model B 25- 25-inch cut is employed with a 5-hp Brigg & Stratton motor. The Pearce also can be obtained in 20-inch and 31-inch models.

A. C. Generating System

318 The Leece-Neville A. C. generating system, with its 80-ampere capacity and 35-ampere output even with engine idling, permits almost unlimited use of electrical accessories. On most vehicles, it will support additional accessories without worry about a run-down battery. Thousands are in use by police and fire departments, and in trucks, buses, highway patrols, and road maintenance cars. For copy of *The Answer to Your Battery Problems*, write to the Leece-Neville Co., 5109 Hamilton Ave., Cleveland 14, Ohio.

Self-Heating Asphalt Smoothing Iron

319 Surfa-Slick is a self-heating asphalt smoothing iron that becomes hot in 10 minutes and retains its heat all day long, according to the J. E. Woods Mfg. Co., 1516 First St., San Fernando, Calif. The manufacturer claims that the device is rugged, simple, and safe to use, and pays for itself in a few days' use.

Traffic Line Marker

320 Produced by the Universal Mfg. and Sales Co., 8716 S. Santa Fe Ave., South Gate, Calif., the one-man operated Mark-Rite line marker can be used for spray stenciling on streets, painting curbs, and fire hydrants. According to the company, its equipment quickly paints sharp lines on concrete, black top, and brick surfaces and up to ¼ inch alongside fixed objects.

Front-End Tractor Loader

321 The Lull Shoveloader is a front-end tractor loader that can be employed for digging, lifting, loading, transporting, scraping, filling, and bulldozing. Among its attachments are material buckets, coal, or snow bucket, pavement ripper and concrete buckets, moldboard extension for standard bulldozers, and fork lift attachment. The Lull Mfg. Co., 3612 E. 44th St., Minneapolis 6, Minn., will send illustrated literature on request.

Reclaims Old Pavements

322 A Wood Preparizer reclaims old pavements by scarifying, pulverizing, and preparing, reports the Wood Mfg. Co., 6900 Tujunga Avenue, North Hollywood, Calif. According to the manufacturer, old asphalt or macadam can be scarified and pulverized at the rate of a mile a day on a 22-foot pavement by hooking a Wood P-600 Preparizer on a D-7 or equivalent. The Wood Roadmixer is a complete continuous pugmill for rebuilding pavements.

"Wetter Water" Puts Fires Out Quicker

323 Unox penetrant "Wetter Water" effectively fights fires, states the Carbide and Carbon Chemicals Co., 30 E. 42nd St., New York 17, N. Y. The company reports that, by using its product, one can put out most fires, or maintain a foothold while laying in heavy lines. Write for the pamphlet, *Miami Wetter Water Wagon* (F-7247).

Street Sweeper

324 The Wilshire power sweeper picks up everything from cigarette butts to pop bottles in one easy operation, reports the Wilshire Power Sweeper Co., 526 W. Chery Chase Drive, Glendale 4, Calif., which claims that its equipment cuts sweeping costs 75%. For further information, write to the company's Dept. C-12.

Air-Operated Paving Breakers

325 On request, the Cleco Division of the Reed Roller Bit Co., 5125 Clinton Drive, Houston 20, Tex., will supply *Bulletin RC-949* describing its paving breakers which, it reports, produce more work per man per hour and cost less to maintain than any other demolition tools in their class. The Reed-Cleco valve on the breakers gives full control of both power and return strokes, reducing recoil.

Versatile Power Wrecker

326 The new Ashton boom truck and wrecker combination is employed for ordinary wrecking work, towing or retrieving cars or trucks that are off the highway and in deep ditches. The extension boom quickly recovers any wreck without complicated rigging, reports the Ashton Power Wrecker Equipment Co., Inc., 1701 W. Lafayette Ave., Detroit 16, Mich. The manufacturer states that the Ashton EXB 1951 extension boom wrecker is an all purpose, one-man power unit that fully meets the constant demand for speed and economy.

Electronic Pipe Locators And Leak Detectors

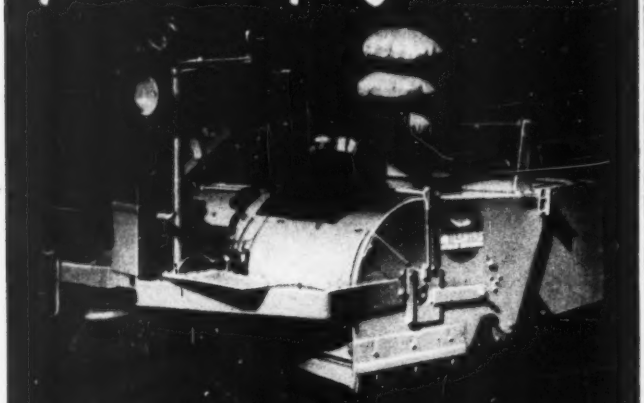
327 On request, The Goldak Co., 1544 W. Glenoaks Boulevard, Glendale 1, Calif., will send a copy of its catalog on its electronic instruments, pipe locators, which survey pipes and cables, and leak detectors, for the detection and location of leaks in water and low-viscosity fuel lines. The Dualtronic is a combination pipe locator and leak detector, which is an electronic multi-purpose instrument that solves both pipe location and water leak detection.

Election Equipment

328 No screws or bolts are needed for Douglas election booths and their steel frames, are easy to install and clean, according to the Douglas Mfg. Corp. of Crete, Nebr. A clean, sanitary storage case keeps booths in shape for a long time. Among the equipment available are Douglas Model B collapsible voting booths, all metal folding booth, collapsible steel table, non-stuffable ballot box, a set of 4 nested ballot boxes, and a collapsible steel ballot box, as well as metal jury wheels.

(Please turn to Page 26 for more Bulletins)

Here's the Answer to your Sweeping Problem



The "White Wing" that never gets tired

WILSHIRE POWER SWEEPER

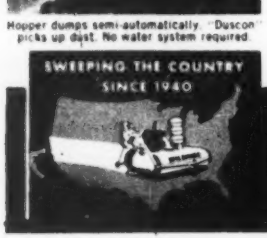
CUTS *YOUR* SWEEPING COSTS 75%

(A Free Demonstration Proves It)

Operator has unobstructed view. WILSHIRE sweeps right up to curbs and posts.

Hopper dumps semi-automatically. "Duscon" picks up dust. No water system required.

The WILSHIRE Power Sweeper (Model 1000-M) does everything a "White Wing" can do . . . and more. In fact, it does the work of 5 or more men with a broom . . . does it more efficiently . . . and pays for itself in 10 weeks or less. Regardless of the size of your city, there is a place for WILSHIRE Power Sweepers on narrow streets and alleys, parks, playgrounds, airports, parking areas . . . hundreds of places the big sweepers can't get at. Full floating brush assembly permits vertical adjustment of the brush shaft without tilting the sweeper in relation to the surface to be swept. Many other exclusive features make operation and maintenance easy and economical. Write or wire for the name of your nearest WILSHIRE Dealer and for a Free Demonstration.



WILSHIRE
POWER SWEEPER
526 West Chevy Chase Drive
Glendale 4, California

Catalogs for You

Write directly to the manufacturers, or use coupon on page 25

Pipeline Locator

329 The Wilkinson line locator detects every part of the underground pipe system, no matter how deep, and shows the depth of lines, according to the Wilkinson Products Co., 3987 Chevy Chase Drive, Pasadena 3, Calif. It can be employed to spot mains, services, valves, stubs, couplings, and bores.

Street Lighting Standards

330 Street lighting, flood lighting, and traffic standards are shown in the catalog of The Electro Corp., 2902 Cormany Ave., Cincinnati 25, Ohio. Modern design systems and foundation plans are covered by detail line drawings together with specifications and purchasing information.

Controlling Water Hammer In Piping Systems

331 *Water Hammer—Cause, Effect and Control in Piping Systems* is the title of a booklet issued by The Williams Gauge Co., 3013 Pennsylvania Ave., Pittsburgh 33, Pa. The manufacturer reports that its Williams-Hager silent check valve successfully eliminates water hammer due to check valves in all types of service, line sizes from 1 inch to 20 inches, and operating pressures from vacuum to 5,000 psi.

Pipe-Repair Clamps

332 Skinner-Seal pressed steel Economy Clamps repair pitted and corroded pipe quickly and economically, according to the M. B. Skinner Co., South Bend 21, Ind. The narrow 3½ inch wide clamp is for pit holes, and the wide 6½ inch clamp for running corrosion spots.

Automatic Food Waste Disposers

333 The Mullins Mfg. Corp., Warren, Ohio, on request will send information about its Youngstown Kitchens food waste disposer. According to the manufacturer, three advantages of its equipment are that it is designed to take food waste continuously, its self-reversing motor changes the direction of the water swirl, assuring complete self-flushing action and complete self-cleaning, and a special self-reversing motor changes direction of shredder with each use.

Destroys Insects

334 The Todd Insecticidal Fog Applicator is a one-man-operated, compact, portable unit which handles solutions, emulsions, suspensions with a range of droplet control from ½ to 200 microns. According to the Combustion Equipment Division, Todd Shipyards Corp., 81-16 45th Ave., Elmhurst, Queens, N. Y., it discharges insecticides in a clean, dry fog which spreads quickly and permeates the tiniest crevices, destroying mosquitoes, flies, and other insects.

Protective Equipment For Civil Defense

335 *Civil Defense Protective Equipment* is the title of a booklet prepared by the Mine Safety Appliances Co., Braddock, Thomas and Meade Sts., Pittsburgh 8, Pa. The manufacturer states that "the effectiveness of the individual depends on preparedness," and lists the equipment needed for soldiers, defenders of the front line and the home front, as well as protection for such services as welfare, warden, fire, public warning, rescue, engineering, law enforcement, transportation, and health. The publication also reports on products issued by the company.

Street Signs

336 Ferro street signs are made of the finest quality steel, and are deeply embossed, and finished in brilliant, permanent porcelain enamel, reports the Ferro Enameling Co., 1100 57th Ave., Oakland 3, Calif. Write for descriptive literature.

(See page 29 for more Bulletins)

Barber-Greene

Now MECHANICAL SNOW REMOVAL FOR SMALL CITIES, TOWNS and INDUSTRIAL PLANTS

- Over-all height—12'3"
- Self-propelled, self-feeding
- One-man operation — no special skill required
- Side discharge loading for fast loading — no backing
- Down-to-pavement clean-up of up to 5 cubic yards per minute!

SELF-PROPELLED • SELF-FEEDING
5 YARDS PER MINUTE

Converts to an All-Weather Bucket-Loader at Negligible Cost!

NOW IS THE TIME TO CHECK THESE FEATURES!

Plan now to save the money formerly wasted on slow, inefficient machine and hand removal of snow. Send for complete information on Model 522 Snow Loader . . . Model 548A Snow Loader (up to 20 yards per minute).

554

BARBER-GREENE COMPANY
AURORA, ILLINOIS

BG *Constant Flow Equipment*

Use this coupon...

Barber-Greene Company
Aurora, Illinois

☐ Model 522 ☐ Model 548A

Name .....

Company .....

City ..... Zone .... State .....

CRAFTSMANSHIP IN WATERWORKS BRASS

. . . results in uniform top quality. McDONALD Waterworks Brass is precision made from 85-5-5-5 metals with every step from foundry to final inspection and testing under rigid control. Shown above is E-4713-Stop, E-4753, E-4754 and E-4756- Copper Service Pipe Couplings.

An illustrated brochure with detailed specifications showing our complete line of Waterworks Brass will be sent to you promptly on request. A. Y. McDONALD MFG. CO., Dubuque, Iowa.

EST. 1856
McDonald

Which Catalogs Interest You?

Write directly to the manufacturers or use the coupon on page 25

Reflectorized Traffic Signs

337 The Cataphote Corp., Toledo 10, Ohio, has prepared a catalog on its equipment. It reports that its embossed, reflectorized traffic signs enjoy long life. Motorists can see the signs easily night or day. Write for your copy of the catalog.

Clay Pipe Products

338 A handy thumb-tab booklet on clay pipe products has been published by the Universal Sewer Pipe Corp., 1500 Union Commerce Building, Cleveland 14, Ohio. Among the products listed are sewer pipe, fire brick and fire clay, septic tanks, segment sewer block, drain tile, liner plates, and filter block.

Caterpillar Instruction Book

339 The Caterpillar Tractor Co., Peoria 8, Ill., has published an *Operator's Instruction Book*. Listed is information on lubricants, fuels, and coolants necessary for top performance in bucking winter weather.

Pipe Locator

340 The Pathfinder Co., 1726 Beverly Drive, Pasadena 7, Calif., on request will supply information on its Pathfinder pipe locator which it claims is a powerful precision unit, economically priced, and which quickly and accurately locates the position and depth of pipes, tees, valves, and buried tools.

Endurance of Cast Iron Pipe

341 The endurance of cast iron pipe is cited in an ad by the United States Pipe and Foundry Co., Burlington, N. J., in reporting that Mobile, Ala., has water and gas mains in service of cast iron pipe that were laid over a century ago. Write for booklet on centrifugally cast iron pipe.

All-Purpose Loader

342 Ray-Land, Inc., manufacturer and distributor of loading equipment, Iron River, Mich., reports that its Model ML-25-B makes a truck self loading, and is ideal for handling pipe and hydrants. It features a double disc clutch, friction and ratchet brakes, power take-off drive, and can be placed on any truck.

Cement for Construction, Repairs and Linings

343 Gunite, produced by the Pressure Concrete Co., Newark 5, N. J. can be employed for repairing reservoirs, dams, sewage-disposal and water filter plants, lining reservoirs, swimming pools, tunnels, and sewers, and for constructing prestressed tanks, stacks, side walls and roofs. Write for illustrated booklet showing Gunite at work.

For Cleaning Streets

344 More cleansing power is claimed for the street flushers produced by the Standard Steel Works, N. Kansas City, Mo. The equipment is built to supply 50 pounds of pressure on each nozzle. It carries a heavy load, reloads quickly, and is easy to operate. Write for descriptive catalog.

Concrete Breaker And Backfill Tamper

345 The R.P.B. Corp., 2751 E. 11th St., Los Angeles 23, Calif., reports that its new and more powerful Mighty "B" Midget is the fastest pneumatic concrete breaker and backfill tamper. When backfilling, it gives high-density compaction, allows immediate repaving, and can be worked manually or automatically. For full details, write to the company's Dept. D.

Water Coagulant

346 A new booklet on its economical and efficient coagulation is supplied by the Tennessee Corp., Grant Bldg., Atlanta, Ga. The company produces Ferri-Floc, which provides rapid floc formation, pH correction, taste and odor control, and removal of turbidity, color, bacteria, manganese and silica.

Double-Gutter Broom For Street Sweeping

347 The double gutter broom Model No. 40 avoids "blind spots" since the operator has a perfect view of the gutter broom and entire street, according to the Austin-Western Co., Aurora, Ill. Special driving and steering controls are not needed because of a full-width seat up front. This model can be purchased with a single gutter broom, and a second added later.

Safety Lanterns

348 Safety lanterns made by the R. E. Dietz Co., Syracuse 1, N. Y., are the night watch lantern which releases a straight-line pencil beam of great intensity visible from all angles, red globe lanterns, which burn bright or dim for long hours to the last drop of kerosene, and highway torches, which are leak and weatherproof and which burn for 30 hours.

Filter Sand And Gravel

349 The Northern Gravel Co., P. O. Box No. 307, Muscatine, Ia., on request will supply details of its filter sand and gravel for filter plants. It reports that its filter sand and gravel is produced from an inland pit and is free from river contamination and foreign matter. It is shipped in bulk or bagged.

Two-Way Sewer Cleaner

350 The Ace Pipe Cleaning Contractors, Inc., 2003 Indiana Ave., Kansas City, Mo., sewer and water-main cleaning specialists, make two-way cleaning sewer equipment which gets rid of all debris, cleaning out rocks, roots, and sand. The company has prepared a 21-minute movie of the Kansas City flood which was taken on the job by ACE crews.

Aerial Surveys For City Planning

351 *Air Speeds to Your Map Needs* is the title of a free book offered by Jack Ammann, photogrammetric engineers, 829-31 N. St. Mary's St., San Antonio, Tex. The firm offers aerial survey services for city zoning and planning, traffic studies and expressway location, drainage and sanitation projects, tax evaluation, and in other fields of planning and construction.

Record Microfilmer

352 A pamphlet on the report of the proceedings of a special meeting of the Judicial Conference of the United States and information on the line of Recordak Microfilmers will be sent by the Recordak Corp., 444 Madison, New York 22, N. Y. The report tells how a Recordak Microfilmer was installed for this special meeting and of its work in maintaining invaluable records.

Power Edger and Trimmer

353 The Modern power edger and trimmer is a heavy-duty machine for edging and timming lawns. The machine's balance is assured by locating the engine close to the ground and supporting the entire mechanism on three 10 by 1.75 rubber tired, steel wheels equipped with ball bearings. The cutting head may be used in a vertical, horizontal, or 45-degree position. For descriptive literature, write to the Modern Mfg. Co., 160 N. Fair Oaks Ave., Pasadena 1, Calif.

Faster Loading with This Refuse Truck

354 Complete information is available from Equipment Mfg., Inc., 21550 Hoover Road, Detroit 5, Mich., on its Quad-O-Matic for garbage and rubbish pick-up. The manufacturer states that its truck provides faster loading and dumping, and larger capacity.

For Sewage Pumping

355 Johnson right-angle gear drive for sewage applications assures continuous sewage pumping, according to the Johnson Gear & Mfg. Co., 8th & Parker Sts., Berkeley 10, Calif. The equipment is manufactured in sizes, types, and ratios to meet varied applications.

Tar-Enameled Steel Water Pipe

356 Bethlehem tar-enameled water pipe is made in 40-foot lengths, and in all practical diameters, starting with a minimum diameter of 22 inches. According to the Bethlehem Steel Co., Bethlehem, Pa., the pipe is virtually leak-proof, is sufficiently resilient to effectively resist effects of soil installation, and can be installed in any type of terrain.

Parking Meters

357 Full data on its line of parking meters is available from the Karpark Corp., Cincinnati 6, Ohio, which reports that it has a meter to meet the special needs of every city. The models include the Superior, with steel head, Husky, low-cost machine, the versatile Twin-O-Matic, and the adaptable Unimatic.

Pipe Pusher Makes Service Installation Easy

358 For a quick, simple way to install underground pipe, the Greenlee Tool Co., 2032 Columbia Ave., Rockford, Ill., suggests using its pipe pusher which does not tear up pavement, floors or lawn, and which eliminates tedious backfilling. Write for illustrated printed matter on this one-man operating machine.

Water Meters

359 When getting new water meters, be sure to buy the one that is best suited for your locality and type of water supply. To guide you with this selection, write to the Worthington-Gamon Meter Division, 296 South St., Newark 5, N. J.

Engineered Timber Construction

360 Timber Structures, Inc., P. O. Box 3782-N, Portland 8, Ore., has prepared a copy of a booklet entitled *Engineered Timber Construction* which cites the structural advantages of engineered timber. It also explains the science of glued lamination, reports on beam and girder applications, and arch applications and standard trusses.

Transite Pipe Service

361 On request, the Johns-Manville Co., Box 290, New York 16, N. Y., will send information on its Transite Pipe Service which it offers to the water-works industry. Five conveniently located plants serve Transite Pipe users from coast to coast. According to the concern, its installation instructors explain recommended installation practices to pipe-laying crews.

These Waste Receptacles Built for Hard Usage

362 Plenty of service is built into Bennett Bilt, self-closing, waste receptacles. Made of extra heavy-gauge, corrosion-resistant steel, they have counter-balanced self-closing, independent doors which stay closed to provide greater sanitation and reduce fire hazards. For details on this and on paper towel and tissue paper dispensers, write to the Bennett Mfg. Co., Alden, N. Y.

(Please turn to Page 34 for more Bulletins)

Hamilton, Ohio proves the wisdom of [redacted] Metered Parking

This thriving, progressive city in Southwestern Ohio recently put into operation the first of several parking lots it plans. This lot is located one block from Main Street, and although in service a comparatively short time, already has proved the wisdom of such a venture. The lot provides safe, inexpensive parking facilities for many cars for short or long periods of time because part of the meters are all-day type, and part for two-hour parking. Incidentally, the photo above was taken early in the morning before the lot filled up.

Hamilton officials are well acquainted with the dependability and earning capacity of MI-CO Meters. In 1944 they installed 300 meters. In 1947 they added 290. Then 90 more in 1948, and in 1951, 266 additional were put into operation. Their earnings are noteworthy. In 1950, 630 MI-CO Meters earned $70,000, and with an increased number in operation Hamilton anticipates well over $80,000 in 1951. Maintenance expense is negligible.

Hamilton's experience and that of hundreds of other communities, should be a deciding factor in favor of MI-CO's for any city, large or small, considering metered parking. Or for those who contemplate the replacing of less dependable makes of meters.

We'll be glad to send you performance reports of hundreds of installations, and complete details on why MI-CO Parking Meters give exceptional service—not for a few years, but for ten years or more. Write for this data today!

MI-CO METERS, 231 Court St. Covington, Ky.

Division of The Michaels Art Bronze Co., Inc.

THE ALFCO TWIN AUTOMATIC PARKING METER

Becomes the...

MI-CO TWIN

AUTOMATIC PARKING METER

THE AMERICAN-LaFRANCE-FOAMITE CORPORATION, of Elmira, New York, announces the sale on December 27, 1951, of its Alfco Twin Automatic Parking Meter to Mi-Co Meters Division of the Michaels Art Bronze Co., Inc., of Covington, Kentucky.

Acquisition of this meter gives Mi-Co Meters two types of parking meters . . . 1. the well known manually operated Mi-Co meter, and 2. the equally famous automatically operated Alfco Twin (now the Mi-Co Twin).

The Alfco Twin Automatic Meter, originally developed by Alfco engineers, manufactured at Elmira, New York, in the Alfco plant and sold through its subsidiary company, International Meters, Inc., made its bow to the motoring public a little less than four years ago. In the intervening time it has proved itself to city officials and the motoring public alike. In service in over 100 cities and towns throughout the nation, it daily provides ease of parking for the motoring public, lower maintenance cost, and stands as evidence of good buying judgment on the part of city officials. The "twin" principle of parking has thoroughly demonstrated itself.

When the Alfco management decided to dispose of its parking meter activity, first thought was given to the many users of the Alfco Twin who will want to purchase additional meters and will from time to time require service on the thousands of Alfco Twins they now have. Alfco engineers will cooperate with those of Mi-Co in the transfer. The Alfco Meter Service Department is being taken over by Mi-Co. Thus present users of the Alfco Twin are assured of the same high degree of service for which Alfco has been noted.

The American-LaFrance-Foamite Corporation is happy that its entire interest in the manufacture and sale of parking meters has been purchased by Mi-Co Meter Division of The Michaels Art Bronze Co., Inc., long a leader in the field of manual meters.

(Mi-Co now enters the automatic field with the most up-to-date of all automatic meters—the Mi-Co Twin.)

AMERICAN-LaFRANCE-FOAMITE Corporation
ELMIRA·NEW YORK·U.S.A.

MI-CO METERS
231 Court St., Covington, Ky.
Division of The Michaels Art Bronze Co., Inc.

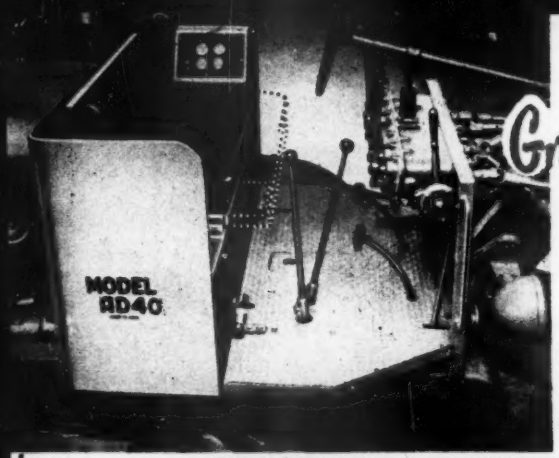
NOW! a Great New HEAVY-DUTY GRADER

Allis-[illegible]s AD-40

Weight — 23,000 lb.
(24,800 lb. with optional calcium chloride in tires)

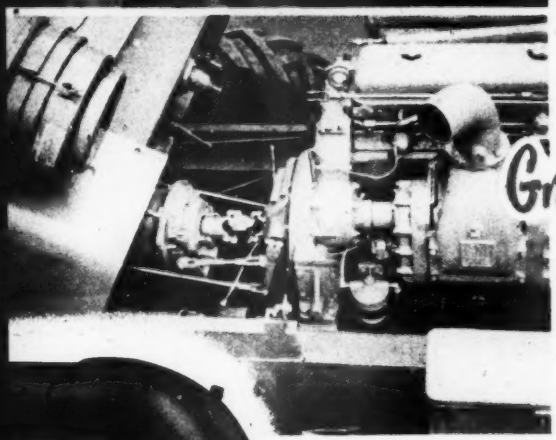
104 Brake hp.

Built to handle All Jobs — FASTER, EASIER



Great New operating ease

No other grader has been designed with the operator more in mind. **Unmatched Visibility**—Single tubular frame from front to platform, new lift cases, low control box and tapered platform give operator a full view of what he is doing. **Feather-Touch Steering**—New hydraulic booster system, fully enclosed in the frame, provides effortless steering with positive control even under toughest conditions. **All-Around Comfort**—Roomy platform, adjustable seat (as shown) and simple controls offer any size operator true comfort—sitting or standing.



Great New service simplicity

Here's maintenance and repair accessibility second to none. Combined fuel tank and seat unit tilts forward for easy access to clutch, transmission and drive shaft. Transmission can be removed without disturbing floor plates. Power take-off and hydraulic pump are mounted outside the dash.

Great New performance

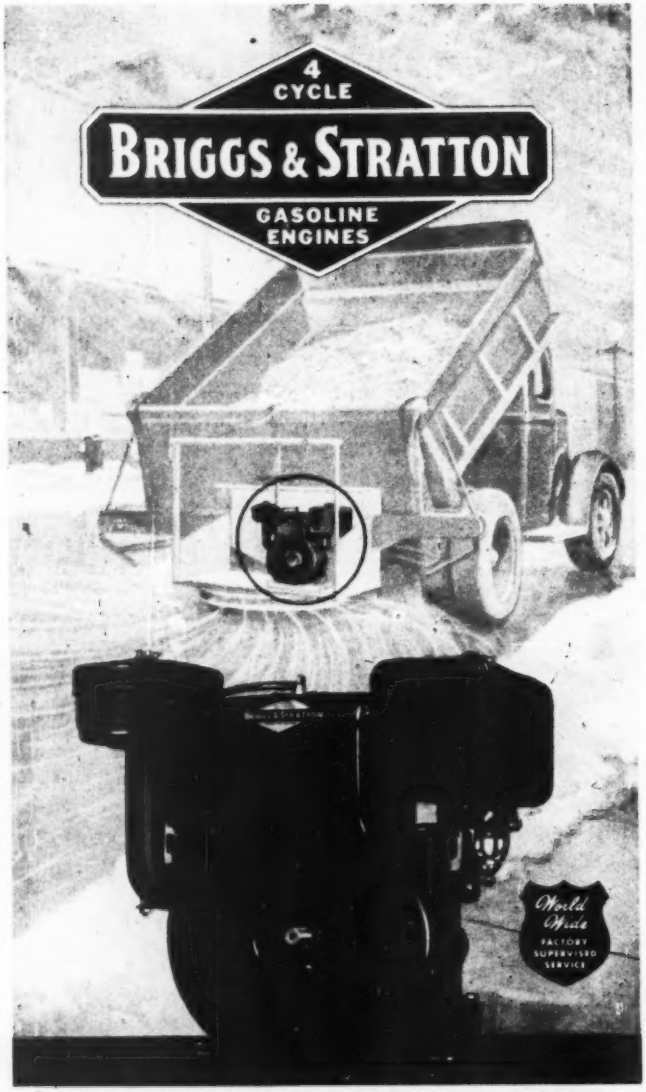
Add these outstanding operator and service advantages to the exclusive Allis-Chalmers features that include ROLL-AWAY* Moldboard—extra high clearances from front to rear—shock-absorbing tubular frame—dependable General Motors 2-Cycle diesel power . . . and you have the finest heavy-duty grader on the market. Get the full story on this new AD-40 from your Allis-Chalmers dealer now.

*ROLL AWAY is an Allis-Chalmers Trade-mark.

ALLIS-CHALMERS

TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

• Designed for Your Job • Built to Take It • Easy to Operate • Easy to Service



Preferred power for sand and material spreaders and a wide range of other equipment for road maintenance and construction — the world's most widely used single-cylinder gasoline engine on machines, tools, appliances used by industry, railroads, oil fields, and on equipment for farm and home.

BRIGGS & STRATTON is the world's largest builder — more than 30 years of continuous production — of single-cylinder, 4-cycle, air-cooled gasoline engines. Briggs & Stratton Corporation, Milwaukee 1, Wisconsin, U. S. A.

In the automotive field Briggs & Stratton is the recognized leader and world's largest producer of locks, keys and related equipment.

Other Catalogs

Write directly to the manufacturers, or use coupon on page 25

(Continued from page 29)

Water-Works Pumps

363 On request, the Aurora Pump Co., 66 Loucks St., Aurora, Ill., will furnish its *Condensed Catalog "M"* which reports on its equipment for water supply, booster service, and makeup water. Apco turbine-type pumps can be supplied in low capacities. Aurora centrifugal pumps may be obtained in many types and sizes.

Visible Time Signal For Traffic Light

364 The Main Flo-Control traffic light is designed to take the guesswork out of traffic control by introducing the element of time into the operation of the standard traffic light. A diminishing column of green light warns motorists and pedestrians how much time remains before the red signal. Complete details will be furnished by The Main Flo-Control Traffic Light, Inc., 956 Robert St., Jackson, Mich.

For Treating Abrasives

365 The Solvay Sales Division of the Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y., gives four reasons why abrasives should be treated with Solvay calcium chloride: it allows the abrasives to stop skids quicker; it keeps them from freezing when stockpiled at sub-zero temperature; it anchors the abrasive to the pavement surface and prevents it from blowing away, and it makes the abrasive go further.

Do You Need Better Public Transportation?

366 If you do, the proved advantages of trolley coaches will certainly look interesting. The Ohio Brass Co., Mansfield, Ohio, has made a number of detailed studies exploring the use of these trolley coaches and will gladly make them available to you without obligation. Write to the company for any details that you think would be helpful.

Pipe Fittings

367 Literature on its Tylox pipe fittings is available from the Hamilton Kent Mfg. Co., Kent, Ohio. Tylox joints T & G or B & S Type A are used for sewers, siphons, pressure and irrigation pipe, and highway and railroad culverts. Tylox joints are made by coupling pipe with Tylox rubber gaskets which are made in two types. The manufacturer also has a pamphlet on its ReNon Coating No. 2, chemical resistant concrete pipe coating.

Floatless Liquid Level Controls

368 The B/W Controller Corp., Birmingham, Mich., has published Catalog 1048-A entitled *All-Electric Floatless Liquid Level Controls.* Features of its equipment are that no floats are required, no vacuum tubes used, and no moving parts in the liquid. Among the subjects discussed in the publication are induction relays, multiple pump controls, special controls and panels, magnetic contactors and starters, combination pump controls, and remote pilot light station.

Portable Fire Pump

369 The Porto Pumper, now available in two models, has rubber gear construction, enabling it to take water from any source, according to Porto-Pump, Inc., 227 Iron St., Detroit 7, Mich. The Trailer model, completely equipped for fire fighting, carries its own water supply and can be towed by any power vehicle equipped with a trailer hitch. The Pallet model readily converts a pick-up truck into an effective motorized fire fighting apparatus. It also carries its own water supply.

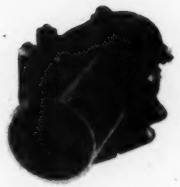
(See Pg. 187 for more Bulletins)

EMERGENCY REPAIRS

Here are 6 safe, sure ways to repair *damaged lines quickly*

It is no more than prudent to be prepared to handle emergency damage quickly and effectively. Many cities are seeing to their stocks of the Dresser products illustrated here, knowing that even unskilled civil defense volunteers can install them with a minimum of training. Resilient rubber gaskets provide lasting protection against vibration and shock.

Be sure you have complete information on these products and their use. See your Dresser Sales Engineer or write to our Bradford Office for details.



Dresser "Adjustable" Sleeve (Style 82) makes quick, permanent repairs on cast iron lines. Light in weight, low in cost. Adjustable for perfect fit. Sizes 4" to 8".

Dresser Split Sleeve (Style 57C) for repairing breaks, splits and holes in cast iron pipe. Ruggedly built. Sizes from 2" to 12".

Dresser Coupling (Style 38) makes it easy to cut in a new length of pipe to replace a damaged section. The only tool needed to install it is a wrench. Sizes $^{3}/_{8}$" to 72" and up.

Dresser "Bell-Pack" Sleeve (Style 126) encloses split and broken bells, mechanical joints. Factory assembled, ready to use. Sizes 3" to 24".

Dresser Bell-Joint Clamp (Style 60) makes permanent, flexible repair on blown or leaking bell and spigot joints. Fully adjustable. High uniform gasket pressure. Sizes 3" to 60".

Dresser "Super-Service Fittings" (Style 90) is extremely rugged joint for service lines. Flexible—withstands vibration and shock. Complete line including ells, tees, adaptors. Sizes from $^{3}/_{4}$" to 2".

DRESSER

COUPLINGS AND REPAIR PRODUCTS

Dresser Manufacturing Division, 59 Fisher Ave., Bradford, Pa. (One of the Dresser Industries)—Warehouses: 1121 Rothwell St., Houston, Texas; 101 S. Bayshore Highway, South San Francisco, Cal.—Sales Offices: New York, Philadelphia, Chicago, Houston, South San Francisco.

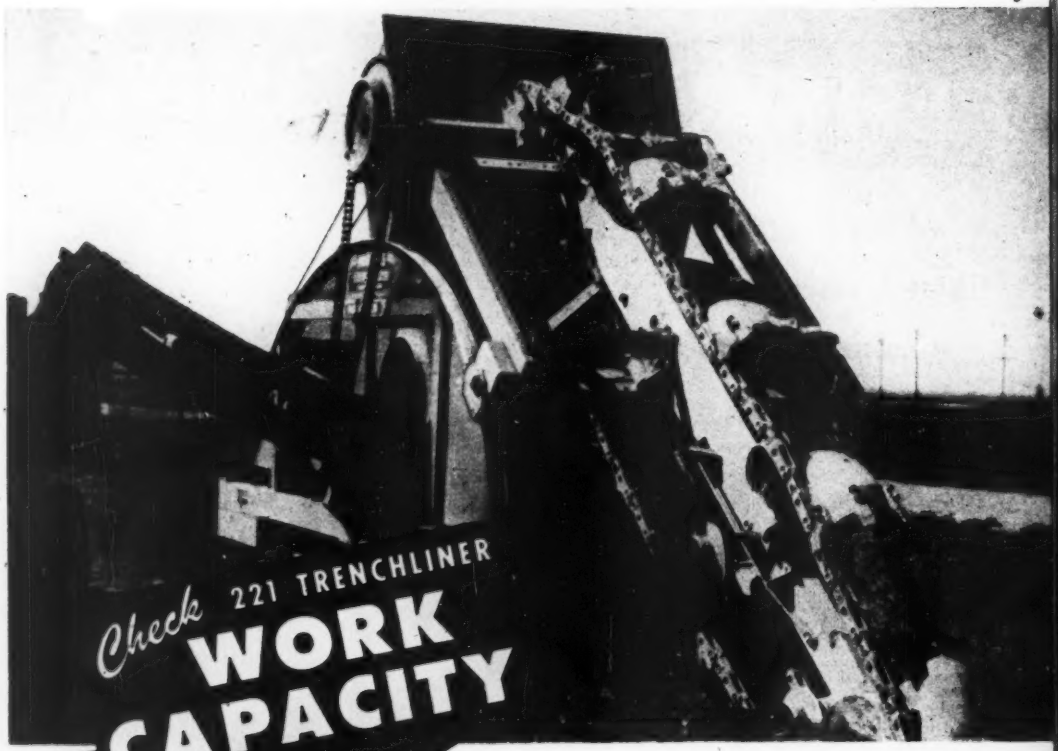
Gentlemen: Please send full information on Dresser Products for emergency repairs.

Name _____

Position _____

Address _____

City _____ Zone ____ State _____



Check 221 TRENCHLINER
WORK CAPACITY

12 cutting widths from 16 to 36", with only 3 standard size buckets, side cutters and oversize teeth, provide a wide range of trenching widths for installing city and subdivision mains, sewers, pipelines.

Telescopic ladder-type boom locks at 18" intervals for quick depth variations up to 8½' deep.

30 digging feeds from 6½" to 13'-10" per min. assure maximum trenching efficiency at every depth, width, and in all types of soil.

Makes vertical set-ins, undercuts sidewalks, sewers, old mains, because all digging feeds, bucket line, conveyor belt and traveling speeds are fully reversible.

Cuts within 10" of curbs, poles and buildings in streets and narrow alleys. Digging boom shifts across full width of machine, digs as efficiently behind either crawler as it does in center position.

Power-shift conveyor, with reversible belt direction, shifts completely through machine in less than 1 minute. This lets the 221 Trenchliner discharge spoil right or left . . . dodge side obstructions without swerving from grade line.

Constant discharge height of 6'-4" for truck loading is maintained by arc of conveyor, regardless of position of digging boom. Arc-type conveyor also gives low-level, close-to-trench deposit.

Automatic safety clutch on excavator drive sprocket protects all machinery against shock loads.

Alloy and heat-treated steels in bucket chains keep maintenance low in toughest trenching service.

Replaceable tooth points, quickly installed, self-sharpening, get full bucket load at every "bite".

To assure maximum feet of trench per hour at lowest cost per foot on your work, get all the facts on this flexible 221 Trenchliner. See your Parsons distributor, or write us. Also: bigger sizes for trenching up to 6' wide, up to 17' deep.

PARSONS CO., Newton, Iowa
(Koehring Subsidiary)

CP282

PARSONS Trenchliners®

10-TON LIFT SERVICE

. . . with KOEHRING

35 M. P. H. 205 TRUCK CRANE

COMBINING heavy-lift capacity with high-speed, rubber-tired mobility, Koehring 10-ton Truck Crane is the most efficient answer for widely-scattered lifting and material-handling jobs around town. Where work requires frequent moves over pavement and through city traffic, this mobile Truck Crane rolls along at 30 to 35 m.p.h. speeds. There's no waiting for trailer, no loading delays. Hinged boom folds back for ample travel clearance, saving more time on every job-to-job move.

Maximum 85-ft. reach, with jib, and 10-ton lift capacity on rubber gives this heavy-duty Truck Crane plenty of operating stability to handle over-size clamshell and dragline buckets on a wide work range . . . quickly converts to ½-yd. shovel or hoe . . . also available on crawler mounting.

Other Koehring Heavy-Duty sizes up to 79½-ton lift . . . 2½-yd. dipper capacities. See your Koehring distributor for complete facts, or write to us for catalogs.

8'-9" OVER-HEAD LOADING

. . . with KWIK-MIX

BITUMINOUS TOWER LOADER

NOW you can load bituminous mix into trucks, overhead hoppers, or stockpile with Kwik-Mix Tower Loader attachment. Available for both Kwik-Mix 10 and 14 cu. ft. Bituminous Mixers, it provides 7'-9" to 8'-9" discharge height . . . saves time and cost of overhead mixer installations on many jobs.

Big bucket holds full mixer batch, is raised by power, dumps automatically at top of tower. Bucket travel and discharge are completed while next batch is being mixed . . . no delay to mixer production. It is single lever controlled by mixer operator . . . mixer engine supplies the power. Tower Loader is quickly collapsed for ample travel clearance . . . is also available on Kwik-Mix 16-S and 11-S Dandie® Concrete Mixers for 9'-2" overhead loading.

Ask your Kwik-Mix distributor for the facts, or write us. Also check Kwik-Mix line of bituminous, 3½-S to 16-S concrete, tilting and non-tilting plaster-mortar mixers, and Moto-Bug® (power wheelbarrow).

KOEHRING Cranes

KWIK-MIX

They work together . . .

for best results

Yes, teamwork is pretty important when it comes to steering a big hook and ladder fire truck. And for ice and snow removal without corrosion, SALT AND BANOX* is the unbeatable team.

Salt is clean, effective and economical, yet many communities hesitate to use salt on streets because of its rusting tendencies.

Now you can obtain the benefits of salt without corrosion. Just add one pound of Banox to each 100 pounds of salt.

Banox is the new rust inhibitor that neutralizes the corrosive effects of street slush and salt brine . . . reduces the rusting of automobiles as well as municipal equipment and structural steel . . . ends the motorist's fears and complaints of rust.

Keep your community progressive and abreast of new developments. End your winter-weather worries like countless other communities have done with the effective and economical Salt-Banox team.

Let us send you additional information on this *proven* method of controlling ice and snow.

*Trade Mark Reg. U.S. Pat. Off.

HAGAN HALL BURDMIN CALGON

calgon, inc.

A SUBSIDIARY OF HAGAN CORPORATION

36
Beamed Waterway
GATE VALVES
24 YEARS ON THE LINE!

...and still going strong!

Replacing standard double-disc gate valves on the wash-water lines of a large filtration plant, these 24-inch Chapman Beamed Waterway Valves show practically no wear after 24 years of service under throttling conditions. And they have been free from the trouble commonly encountered with double-disc valves ... uneven wear on seat rings. For this exclusive Chapman design provides extra bearing contact for the downstream disc, reducing wear and preventing it from tipping into the waterway. This extra contact is provided by vertical downstream-beams that are faced with bronze and opposed by bronze strips on the downstream disc.

Many installations of these unique valves in filtration plants, in sizes from 6" to 36", have given results that cannot be matched by any other type of valve. See what they can do for *your* operation. Send for Catalog No. 45.

Send for your copy of illustrated Catalog No. 45.

THE CHAPMAN VALVE MFG. CO.
INDIAN ORCHARD, MASSACHUSETTS

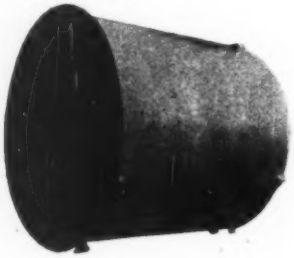
FOR THOSE EXTREMELY CORROSIVE CONDITIONS...

CONSIDER THE USE OF *Amer-Plate*

Available in Two Convenient Types To Meet Your Needs

Plain AMER-PLATE for existing steel or concrete tanks or structures

Plain Amer-Plate is smooth and flat on both sides. It is applied to existing surfaces using specially developed cements that provide a firm bond with those surfaces.



T-LOCK AMER-PLATE for newly cast concrete pipe and structures

T-shaped parallel anchors are an integral part and extend along the back of each Amer-Plate sheet. The sheet is applied to the inner forms of tanks, concrete pipe, and structures. When the concrete is poured, the trees are embedded and locked into the concrete.

HERE'S A NEW, EXTRA-TOUGH, ECONOMICAL INDUSTRIAL SHEET LINING

Especially designed to protect against extremely corrosive conditions, Amer-Plate is particularly adaptable for use in highly corrosive sewers, chemical storage tanks, tank cars and tank trucks hauling unusually corrosive solutions.

Composed of inert resins and plasticizers, Amer-Plate is impervious to gases, highly resistant to acids, alkalies, alcohol, oils, salts, and petroleum products. It has a very low moisture vapor transmission rate, will not support combustion, and contains no toxic materials.

Amer-Plate is a flexible thermoplastic sheet, practical for application to flat, curved and angular surfaces. Its economy and effectiveness has been proved in the field in over 10 years of development and testing.

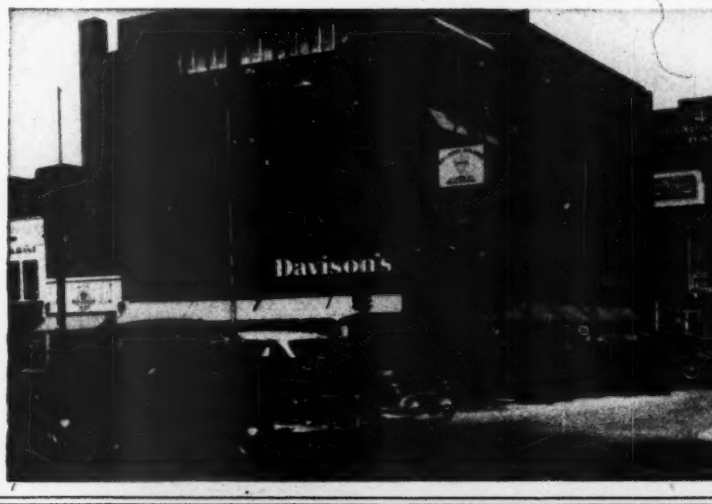
So... wherever you require long lasting protection against extreme corrosion, make a full investigation of the possibility of using Amer-Plate. Write for complete information.

Amer-Plate industrial sheet lining is the result of many years experience in the manufacture and application of Amercoat protective coatings.

AMERCOAT CORPORATION

A division of American Pipe and Construction Co.

4809 Firestone Blvd., South Gate, California



This entrance shaft at intersection of Broadway and 12th Streets, Columbus, Georgia is the only evidence that a new sewer is being installed under a busy street.

Picture of a sewer crossing the street

There is little evidence that a sewer was being installed under this busy street. No torn-up pavements, barriers, or "Street Closed" signs. And merchants were enjoying normal business.

The answer is that the sewer was tunneled under the street with Armco Liner Plates. This made it unnecessary to interrupt traffic or business. Instead, a few workmen with Armco Tunnel Liner Plates were able to handle the job easily and economically. Even bad weather would not have hampered the work schedule.

Armco Liner Plates are strong, yet one man can easily carry, hold and bolt a section into place. No special equipment is required and there is no need to replace expensive pavements when the job is finished.

Let us tell you more about the greater safety, convenience and economy of using Armco Liner Plates for underground construction. Write for complete data. Armco Drainage & Metal Products, Inc., 1052 Curtis St., Middletown, Ohio. Subsidiary of Armco Steel Corporation. Export: The Armco International Corporation.

UNDER THE STREET are workmen installing Armco Liner Plates. Work goes smoothly, quickly. Lightweight plates are easy to bolt into place.

ARMCO TUNNEL LINER PLATES

ARMCO

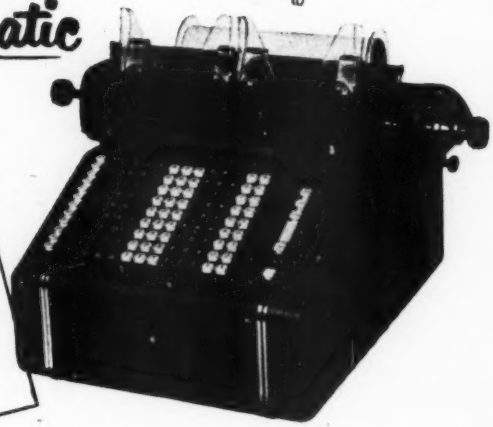
SPEED and EFFICIENCY

you never thought possible in customer and general accounting for water works

The Incomparable New

Burroughs Sensimatic

accounting machine

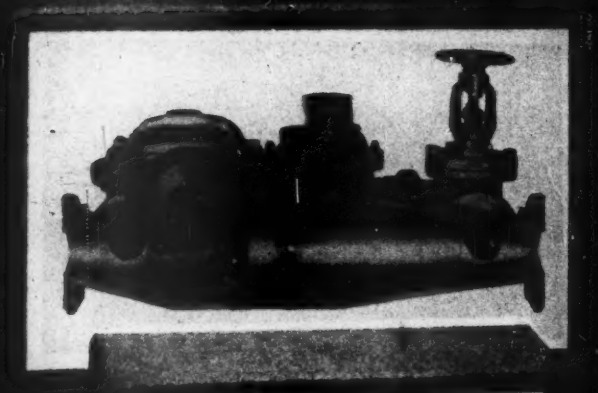


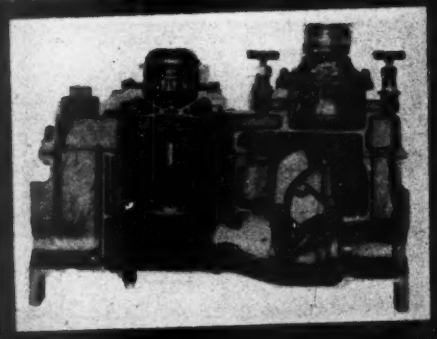
HANDLES ALL THESE JOBS – *and more*

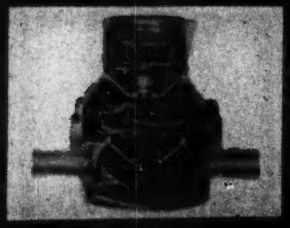
Customer Billing • General Ledger
Budgetary Ledger • Payroll
Operating and Work Order Ledgers

There's a new standard of accounting efficiency in many water works today. It's a standard made possible by a completely new idea in mechanized accounting—the revolutionary new Burroughs Sensimatic with the "mechanical brain" that directs it automatically through every accounting operation. Here is a new accounting machine with amazing versatility, speed and ease of operation. The Burroughs Sensimatic does a wide variety of accounting jobs with a saving of time, money and effort over former methods—and just a turn of the job selector knob moves it speedily from one posting job to the next. Find out today how the Burroughs Sensimatic can save working hours, reduce your accounting costs, and increase efficiency. And all at a surprisingly moderate cost, too. Call your local Burroughs office or write for complete information today. Burroughs Adding Machine Company, Detroit 32, Michigan.

WHEREVER THERE'S BUSINESS THERE'S **Burroughs**







The Three Cornerstones of the Water Works Field

HERSEY DETECTOR METER

HERSEY COMPOUND METER

HERSEY DISC METER

HERSEY MANUFACTURING COMPANY

SOUTH BOSTON, MASS.

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Trafficone SYSTEM of TRAFFIC CONTROL LEADS the NATION in Economy Efficiency Safety

say top traffic experts

"The Trafficone is the best engineered safety device I have seen in thirty years of traffic work."

This statement was made by the Traffic Engineer of a large city. Severe tests throughout the country under the most critical conditions have proved *THIS IS A FACT*

SAFETY of RUBBER...AUTHORITY of STEEL

Trafficones are rapidly replacing old fashioned hazardous wooden and metal barricades and expensive flags and wire markers. Dangerous accident conditions to motorists and personal injury problems with workers have been eliminated with this safe, yet effective control.

STORAGE and TRANSPORTATION is SIMPLE

A minimum of space is required for TRAFFICONE storage because of their stacking feature. One truck and one man can now erect barricades and traffic controls over large areas where it used to take two or more, and in 1/10th the time.

LONG LIFE and LOW COST MAINTENANCE means ECONOMY

For complete information on effective traffic control, write for illustrated manual and colorful brochure.

Interstate Rubber PRODUCTS CORPORATION

908 Avila • Los Angeles, California

Pat. 2332774

CUT DIGGING COSTS with the new Sherman Power Digger

Patented, actuated bucket gives you selective digging action, better loading, greater versatility.

All-hydraulic action—made possible by heavy-duty hydraulic cylinders—assures efficient performance.

SPECIFICATIONS

Shovel reach below ground surface	8 feet
Digger reach behind tractor	10 feet
Swinging arc	140°
Trench width, standard digging shovel, single cut	18 inches
Digging shovel capacity	3.5 cu. feet
Loading shovel capacity	5 cu. feet
Loading clearance, digging shovel, loaded	7 feet
Loading clearance, loading shovel	10 feet

Standard tractor mounting gives unmatched maneuverability and transportability.

•

Digs ditches, trenches, footings, culverts, basements and other excavations.

•

Handles roots, rocks, hard clay and oiled road surfaces.

Works well behind the tractor at any angle.

•

Actuated bucket raises high enough to load standard dump truck.

WRITE FOR LITERATURE TODAY!

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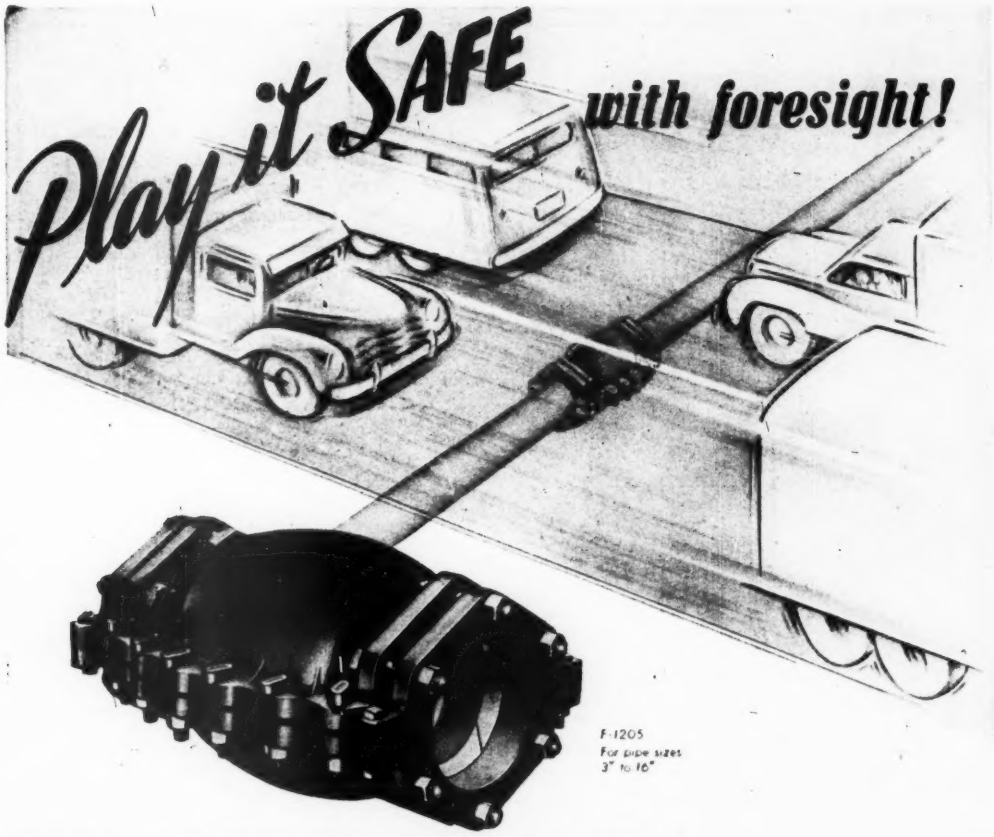
Sold Exclusively By **SHERMAN PRODUCTS, INC.**

SHERMAN PRODUCTS, INC., Department No. 111 Royal Oak, Mich.

Play it SAFE with foresight!



F-1205
For pipe sizes
3" to 16"

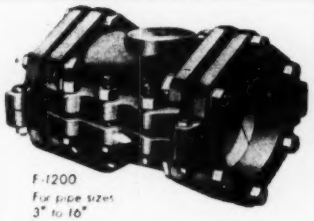
Reinforce all joints subject to vibration with

CLOW

Mechanical Joint BELL SPLIT SLEEVES

When ponderous trucks roar and rumble by, even our finest highways tremble with vibration . . . and so does the water pipe buried below! That's why it's best to play it safe: don't wait for a break; have the foresight to install Clow Mechanical Joint Bell Split Sleeves as *original equipment* wherever the pipe must pass under highway truck routes or under railroad tracks. Specify them for marshland or under water, too—in fact, everywhere that pipe is not readily accessible in case of emergency. They're easy to install . . . no lead, no jute, no caulking!

Write for circular with helpful information and illustrations



F-1200
For pipe sizes
3" to 16"

Use these F-1200 Clow Mechanical Joint Straight Split Sleeves for permanent repairs to pipe barrels. 12" and smaller sizes will repair lengthwise breaks up to 8 inches. 14" and 16" sizes, up to 17 inches.

JAMES B. CLOW & SONS

201-299 North Talman Avenue • Chicago 80, Illinois

and their National Cast Iron Pipe Division, Birmingham, Alabama; subsidiaries Eddy Valve Company, Watsford, N.Y.; Iowa Valve Company, Oskaloosa, Iowa

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Chicago Office — 308 W. Washington St., Chicago, Ill.

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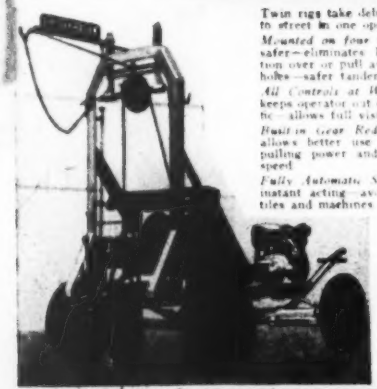
Cable Drum Clutch
Upper Arch Sheave
Automatic Cable Level Wind

OK CHAMPION *Power Sewer Cleaner*



Twin rigs take debris from sewer to street in one operation.

Mounted on four wheel truck—safer—eliminates lifting to position over or pull away from manholes—safer tandem towing.

All Controls at Working End—keeps operator out of passing traffic—allows full vision of work.

Built-in Gear Reduction Ratio—allows better use of engine for pulling power and bucket travel speed.

Fully Automatic Safety Clutch—instant acting—avoids damage to tiles and machines.

CHAMPION CORPORATION
Hammond, Indiana

SEND FOR LITERATURE

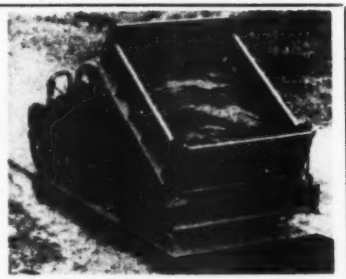
Champion Corporation, 4716 Sheffield Ave., Hammond, Indiana
Please send information on new OK Champion Power Sewer Cleaners.

Name.....Title.....

Address.....

Do your seal-coating and ice control jobs the fast, easy Swenson way. Spreads salt, chloride, sand, cinders any width or amount desired.

Free Information



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Lindenwood, Ill.

Connery's Style W Heating Kettle Made in 75, 110, 165 and 210 Gallons.

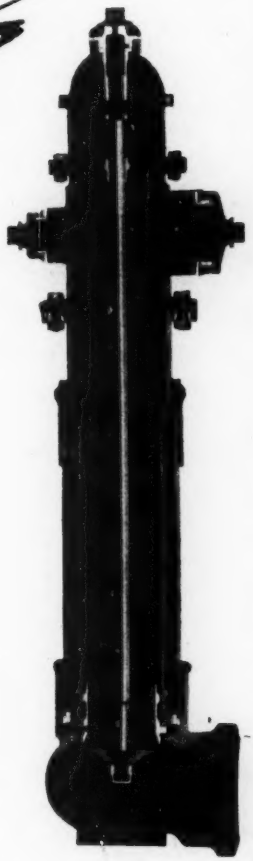
For speedy heating of Tar and Asphalt for road, street and airport runway repairs use Connery's style W kettle, the most efficient heating kettle of its kind.

Write for Bulletin 87.

CONNERY CONSTRUCTION CO.
4000 N. Second Street Philadelphia 40, Pa.

Quick as changing a wheel

When a Mathews Hydrant is broken in a traffic accident, two men can put in a new barrel in a matter of minutes—*without excavating*. Speed of replacement is important when community safety is at stake.



MATHEWS
HYDRANTS

Made by R. D. Wood Company Public Ledger Building, Independence Square, Philadelphia 5, Pa. • Manufacturers of "Sand-Spun" Pipe (centrifugally cast in sand molds) and R. D. Wood Gate Valves

Mathews Modernized Hydrants . . . Tops in Convenience and Dependability Compression-type valve prevents flooding • Head turns 360° • Replaceable head • Nozzle sections easily changed • Nozzle sections raised or lowered without excavating • Protection case of "Sand-Spun" cast iron for strength, toughness, elasticity • Operating thread only part to be lubricated • All working parts contained in barrel • A modern barrel makes an old Mathews good as new • Available with mechanical joint pipe connections

FLEXIBLES "Clean Up" KANSAS CITY UNDERGROUND!

. . . following the Flood Disaster

30 "FLEXIBLE" power bucket machines have been working in the Kansas City flood area since August! This is no doubt America's ***all-time-biggest*** sewer cleaning job. To aid the stricken area quickly, many cities from as far away as Ohio, Minnesota and Texas made their "FLEXIBLE" equipment available under "FLEXIBLE" supervision, in addition to those immediately supplied by the factory.

America recognizes "FLEXIBLES" with the Red Cross and National Guard as essential in emergencies.

Write for FREE DATA to Dept. A

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AMERICA'S LARGEST MANUFACTURER OF PIPE CLEANING TOOLS & EQUIPMENT

A BRILLIANT NEW MEMBER

of the GORMAN-RUPP

LIGHT WEIGHT PUMP FAMILY

The "PELICAN"
"A wonderful bird is the Pelican
His bill holds more than his Bellycan
He puts in his beak
Enough for a week,
I wonder just how the Hell-e-can"
TWO INCH 7500 G. P. H.

A WONDERFUL PUMP IS THE PELICAN

The Lowest Priced Two-Inch Pump Of Its Capacity On The Market!

The Pelican is the Quickest Priming, Fastest Pumping, "never quit" pump available, - it challenges any pump its size and type to equal its performance.

- **Suction lift** - up to 25 feet at sea level.
- **Automatic Self-priming** - no ports or valves, - just start the pump and you start the water.
- **Portability** - constructed of sturdy cast aluminum with carrying handle for easy portability. One man can easily handle the Pelican.
- **Non-Clogging** - any muck or solids that will pass the intake strainer will pass through the pump.
- **Simplicity** - the impeller, the only moving part, is mounted directly on the engine shaft and operates at engine speed.

There are so many practical uses for Gorman-Rupp Lightweight Pumps that it is impossible to list them. They are invaluable for utility and municipal applications. Their trouble-free performance and Gorman-Rupp guarantee are your positive assurance of satisfaction.

Write for bulletins 1-LW-13 and 7-LW-13.

THE GORMAN-RUPP COMPANY
MANSFIELD, OHIO

Patent No. 2461925

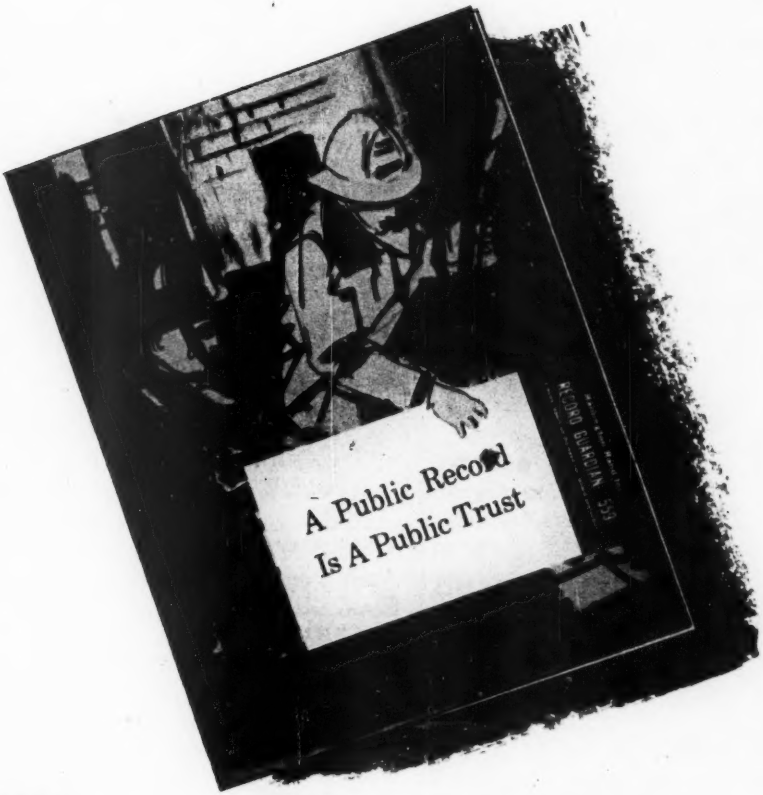
The Pelican 2" - wgt. 70 lbs. 7500 g.p.h. - Primes in 99 sec. at 25 ft. suct. lift.

The Midget 1½" - wgt. 62 lbs. 5500 g.p.h. - Primes in 75 sec. at 25 ft. suct. lift.

The Hawk 2" - wgt. 110 lbs. 10,000 g.p.h. - Primes in 47 sec. at 25 ft. suct. lift.

The Eagle 3" - wgt. 117 lbs. 18,000 g.p.h. - Primes in 79 sec. at 25 ft. suct. lift.

A COMPLETE LINE OF ENGINE POWERED AND ELECTRIC MOTOR DRIVEN SELF PRIMING CENTRIFUGAL PUMPS



Will your city records burn next?

The chances are excellent that if you read this free folder, your essential, irreplaceable records will *never* be lost to fire.

For Record Guardian SC 705 shows you exactly what happened to city and county records in four recent fires—shows you too, how easy and how inexpensive it is to protect your records *before* fire strikes.

Remember, fire never gives warning. And city officials have even more responsibility than executives in private business to take all necessary precautions against loss of their records. Use the coupon—send for this factual booklet *today*.

There's a Remington Rand insulated Safe-Cabinet product for certified fire protection of every type of record. Safe-Cabinet equipment provides up to 4 hours' security from fires up to 2000°F in intensity.

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You DON'T have to GUESS

WILKINSON LINE LOCATOR

the original lightweight, compact, precision locator — is **POWERFUL.**

It locates every part of your underground pipe system, however deep and shows the depth of lines.

It's FAST, EXACT, SIMPLE.

Avoid expensive damage to subsurface structures by power trenching machines with the Wilkinson Line Locator, the electronic sleuth.

To Spot Your
- MAINS
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QUICK FAST EXACT

QUALITY IS ALWAYS CHEAPER

WILKINSON PRODUCTS CO.
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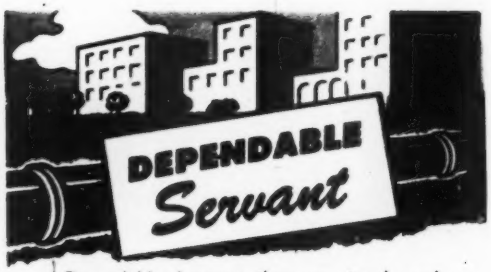
PASADENA 3, CALIF.



Dependable because they are tough and rugged. Made to withstand the wear and tear of the modern day strain and stress. For generations of incomparable service, only cast iron pipe can qualify. Serving the industry with Super de Lavaud Cast Iron Pipe, centrifugally cast in modern lengths.

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FOR JOINTING CAST-IRON WATER MAINS

Melted and Poured — *No Large Bell-holes to Dig*
Saves at Least 75%

Leadite is shipped in powder form, packed in sacks of 100 lbs. net each. Leadite tested and used for over 50 years @ Leadite joints improve with age.

Be sure it is Leadite and accept no imitations

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Double-Faced Accident Prevention Signs
A Positive Warning Both Ways
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REDTECO (WHITE ON RED) — MEN WORKING — **YELTECO** (BLACK ON YELLOW)

Clear Cut Lettering—Will Not Crack, Peel or Break
Light Weight Permits Safe, Easy Posting
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FOR ALL MUNICIPAL AND WATER WORKS USES

We can furnish you any type of lead or wire seals for every need, including water meters, electric meters, parking meters, boxes, drums, trunk cars, fire extinguishers, cash boxes, governors and carburetors.

All size leads. Wire may be had in copper, galvanized and steel, either cut to standard lengths or in spools or coils, single crimped 2, 3 & 4 ply in most gauges.

We also carry a complete line of seal presses. Will letter to order with no additional charge.

Cast iron stop cock seals for sealing in position any size or type pipe stop cocks including lock-wing stops.

Same type seals also manufactured for all type and size pipe unions.

THE UNITED SEAL COMPANY
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For Water Treatment . . .

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Since 1881

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Ammonium Bicarbonate
Para-dichlorobenzene
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Monochlorobenzene
Methanol
Ammonium Chloride
Formaldehyde

New York's City Hall, completed in 1811, as it looked 100 years ago

The City of New York has several cast iron water mains in service that were laid more than a century ago. They are part of approximately 5,000 miles of cast iron mains representing about 98% of all the pipe in New York's distribution system. The contrast in traffic and construction, above and underground, today and 100 years ago, is fantastic. Yet the shock-strength, crushing-strength and beam-strength of cast iron mains have enabled them to withstand the unforeseen stresses imposed by vast changes. Because of these strength factors and effective resistance to corrosion, cast iron water and gas mains laid over 100 years ago, are still serving in the streets of 38 cities in the United States and Canada.

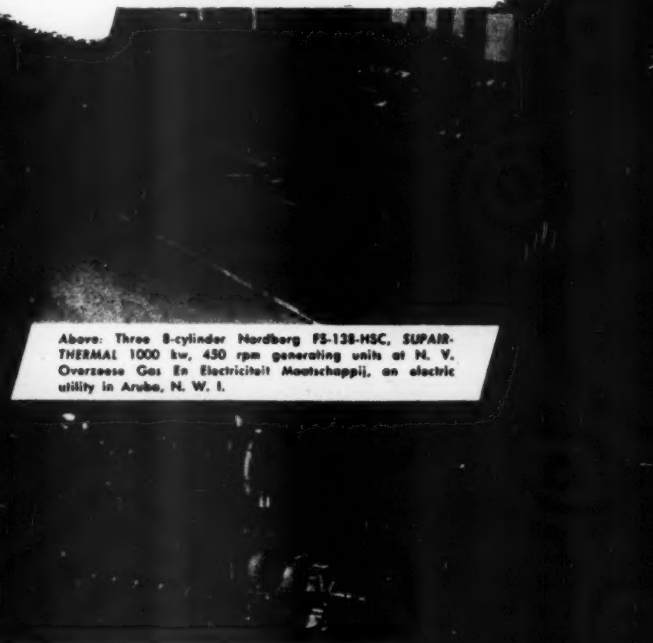
United States Pipe and Foundry Company, General Offices, Burlington, N. J. Plants and Sales Offices Throughout the U. S. A.

U.S. PIPE

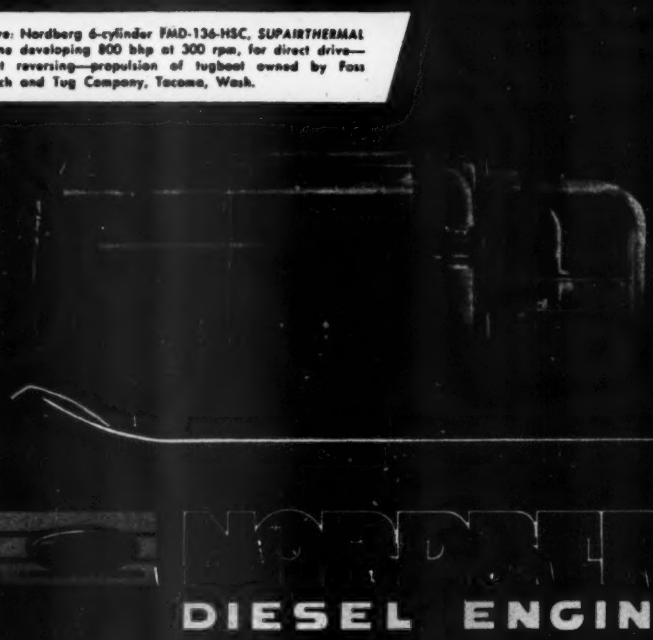
NUMBER TEN OF A SERIES

How to DOUBLE YOUR HORSEPOWER WITHOUT INCREASING YOUR FLOOR SPACE.....

with the **NORDBERG** *Supair Thermal Engine*



Above: Three 8-cylinder Nordberg FS-138-HSC, *SUPAIR-THERMAL* 1000 kw, 450 rpm generating units at N. V. Overzeese Gas En Electriciteit Maatschappij, an electric utility in Aruba, N. W. I.



Above: Nordberg 6-cylinder FMD-136-HSC, *SUPAIRTHERMAL* engine developing 800 bhp at 300 rpm, for direct drive—direct reversing—propulsion of tugboat owned by Foss Launch and Tug Company, Tacoma, Wash.

NORDBERG

DIESEL ENGINES

General Contractors are building a stronger America...

★ **CONSTRUCTING DEFENSE FACILITIES**
for the nation's armed forces in the United States and throughout the world.

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which are increasing America's manufacturing and productive capacity.

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essential to the growth and development of our nation and its communities.

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to repair damage caused by war or other disaster.

★ **COLLABORATING FOR EFFICIENCY**
with all branches of the construction industry.

THE A. G. C. EMBLEM ASSURES SKILL, INTEGRITY AND RESPONSIBILITY IN CONSTRUCTION

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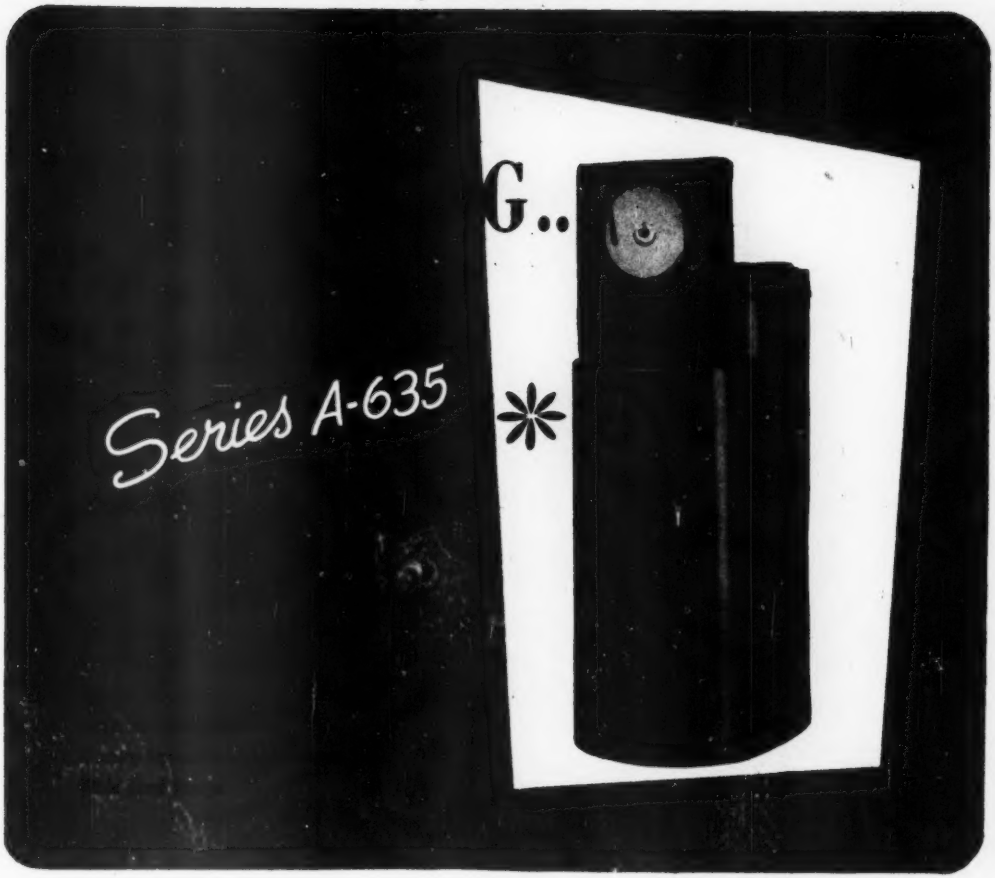
Representing More Than 6,000 of the Nation's Leading General Contracting Firms of Proven Skill, Integrity and Responsibility — Engaged in the Construction of Buildings, Highways, Railroads, Airports, Public Works, Defense Projects

NATIONAL HEADQUARTERS, MUNSEY BUILDING, WASHINGTON 4, D. C.

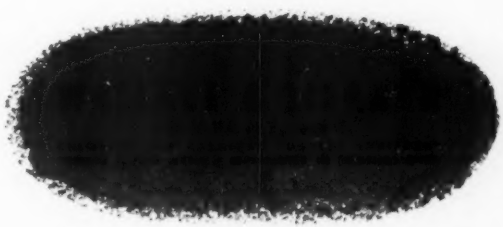
America Progresses Through Construction . . . Construct by Contract!



Special requirements of Fluoridation — primarily, extreme accuracy and dependability — were considered foremost in the design of W&T's new Series A-635 Fluoridator. A selection of models and a wide feed range make this feeder suitable for the application of sodium fluoride or sodium silicofluoride in most communities.

The basic feeder is volumetric with manual control, featuring the new two-directional feed screw for increased accuracy. Built-in scales can be supplied for periodic checking of the weight of chemical in the hopper.

The gravimetric, loss-of-weight, model is controlled from a unique scale beam housed in a dust-tight compartment. Registers indicate the rate of feed and the weight of chemical in the hopper at all times. Loss-of-weight recording is available with the gravimetric feeder to provide a permanent record of fluoridation.

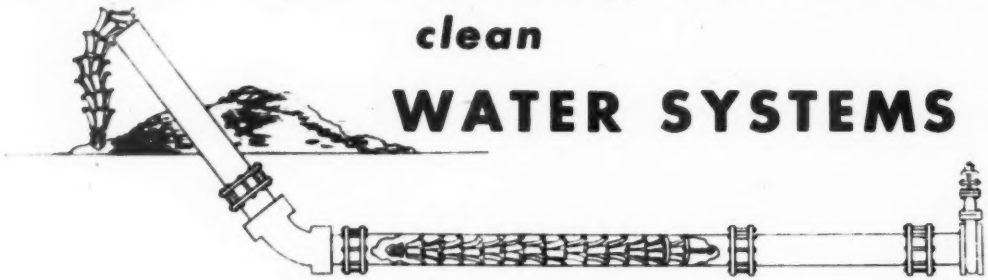


S 67

ACE Pipe Cleaning Contractors

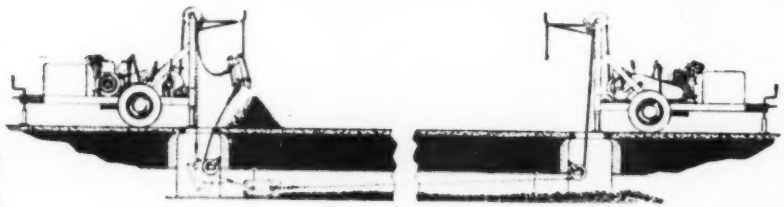
clean

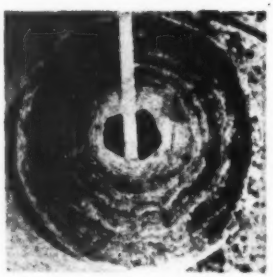
WATER SYSTEMS



and SEWER SYSTEMS

Anywhere
Any Time
Any Size
24 Hours a Day
7 Days a Week





Neglected city and industrial water pipes fill with debris like this—cut down service, increase fire rates. Let ACE clean them for you!

Fast, modern water pipe and sewer cleaning service—that's what ACE Pipe Cleaning Contractors, Inc., offers your city or industry *today*, wherever you are in the United States or Canada!

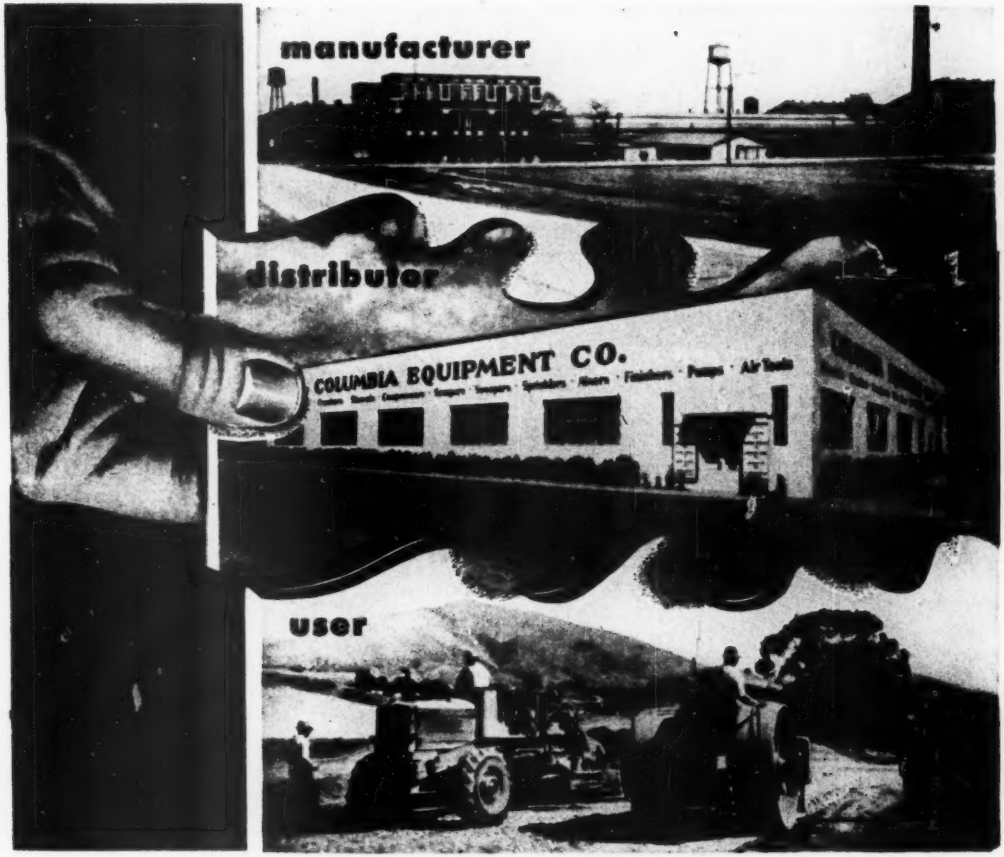
Preserve your system "for the duration," while pipe and steel are in short supply, with this thorough, economical service.

ACE brings the most modern equipment known to the job, plus trained, skilled crews to get the job done right, quickly and at ***lowest possible*** cost. ACE has representatives in several principal cities, ready to serve you. Write for further information. Let us send a man, at no expense or obligation to you. Get in touch with us today!

Cleaning jobs done thus far in 1951: Corps of Engineers, U. S. Army; City of Kansas City, Missouri; City of Kansas City, Kansas; Swift & Company; Armour & Company; Cudahy Packing Company; General Motors Corporation; Olathe, Kansas; Belton, Missouri; Milburn Country Club; Council Grove, Kansas; Procter & Gamble Mfg. Company.

✱ Ask to see our new 21 minute newsreel movie of the great Kansas City Flood of July, 1951. No cost or obligation.

ACE Pipe Cleaning Contractors, Inc.
CHestnut 2891
2003 Indiana Kansas City 1, Mo.



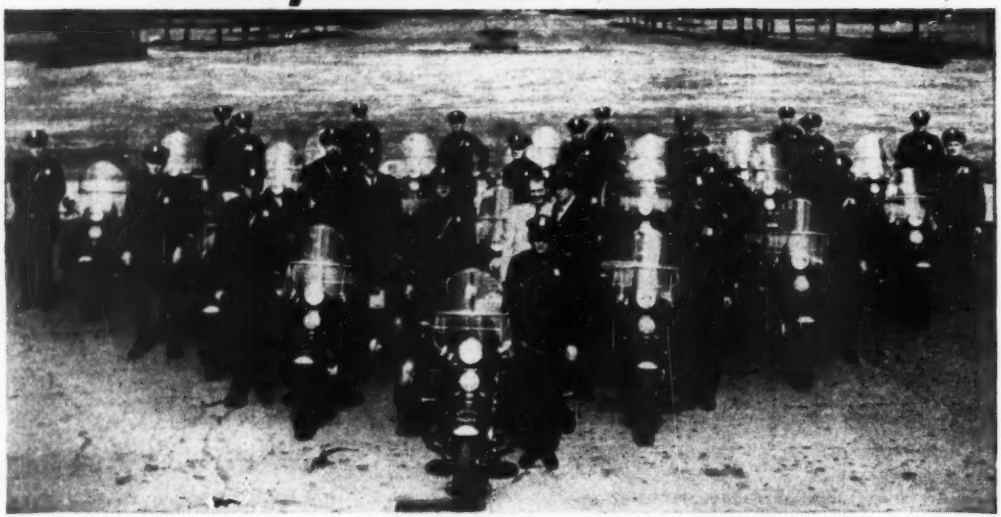
AN *Essential Part* OF THE PICTURE

It has been said that America has solved the problem of low-cost production of machines and goods, but that the problem of efficient, economical distribution remains largely unsolved. However true this may be in other fields, we sincerely believe that it is not true of the construction equipment industry, where the Distributor has enjoyed the confidence of his customers in times of peace, and has more than justified that confidence during troubled and uncertain periods when wars and "rumors of wars" bring about shortages of men and machines.

Your nearby Austin-Western distributor, with his skilled mechanics and adequate shop facilities, considers it his primary responsibility to help you get the utmost in service and satisfaction from the products he sells . . . is an especially good man to know in times like these.

AUSTIN-WESTERN COMPANY Subsidiary of Baldwin-Lima-Hamilton Corporation **AURORA, ILLINOIS, U.S.A.**

DETROIT—America's Auto Capital Adds fleet of 2-way Radio-Equipped Harley-Davidson Servi-Cars



Shown near center are Inspector Bonifield, commanding officer of the Motor Division; Lieutenant Weiner of the Motor Division; Don Slutz (light suit), head of Traffic Safety Association; Traffic Director James Hoye (dark suit).

IN the latter part of 1951, Detroit took delivery of 20 two-way-radio equipped Harley-Davidson Servi-Cars . . . to be used for "trouble-shooting" traffic congestion and to keep main arteries open during rush hours. With 30 solo Harley-Davidsons already in use, the total is now 100 units for Detroit's motorcycle fleet — Harley-Davidsons exclusively.

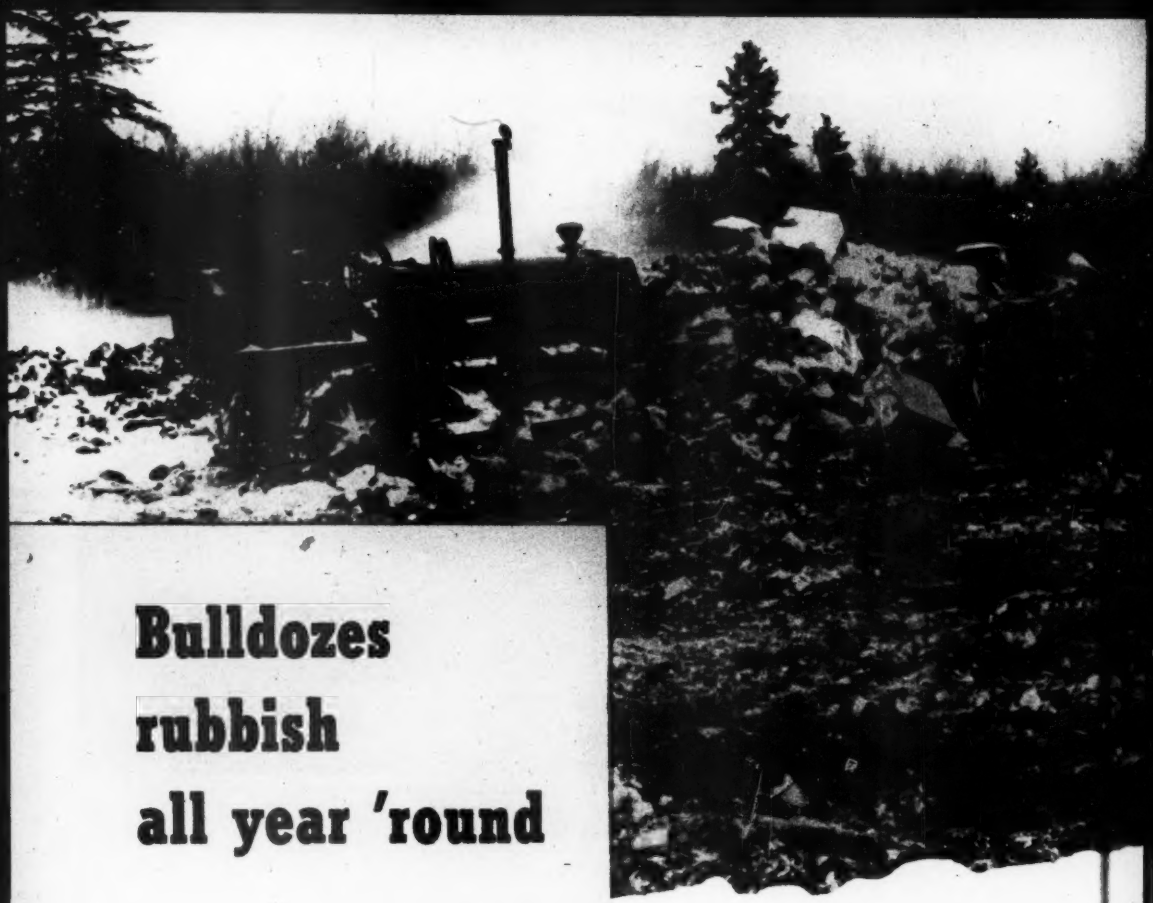
Thus in Detroit, which ranks among the leaders in the national safety poll . . . as well as in hundreds of other cities where accident prevention and law enforcement are at high efficiency . . . Harley-Davidson Police Motorcycles and Servi-Cars are standard equipment. Both types of machines meet a wide range of requirements in police duty — *yet each machine provides outstanding advantages for enabling mounted officers to perform specialized police duties with exceptional efficiency.* For complete information about Harley-Davidson Police Motorcycles, Servi-Cars and Sidecars, call your dealer or write HARLEY-DAVIDSON MOTOR COMPANY, Milwaukee 1, Wisconsin

POLICE MOTORCYCLE BOOKLET

You'll find many helpful ideas for your traffic department, in this new, illustrated 16 page booklet. It's full of information about police motorcycles and their use in law enforcement and accident prevention work. Your copy will be sent promptly on request. No obligation. Write today.

HARLEY-DAVIDSON

MOTORCYCLES POLICE BETTER TRAFFIC CONTROL SERVI-CARS



Bulldozes rubbish all year 'round

'Dozing rubbish is tricky work at best. In the middle of a Wisconsin January it can be a tractor's toughest test. Still, the job must be done. That's why Mr. Herbert Dann, Assistant Director of Public Works, City of Superior, listed "traction" as the biggest operating advantage he found in the "Caterpillar" D2 Tractor pictured here.

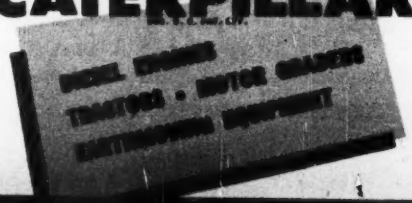
"Then I'd say low-cost operation," he continued. "We've used them since 1934. Those first machines are still operating and we must say we have had our money's worth out of them. This D2 replaced another manufacturer's wheel tractor out on the city dump and it has done a very good job of handling the situation."

The "situation" is a sanitary landfill job, and the "Caterpillar" D2 track-type Tractor with No. 2A 'Dozer is the machine to handle it. It digs a trench for garbage, compacts the dumped garbage and buries it beneath two feet of earth, then compacts the fill into a solid, sanitary surface, ready for future development.

Projects like this contribute much to our cities' welfare. Today, more than ever, public officials like Mr. Dann realize the importance of keeping municipal equipment in first-class running condition. "Caterpillar" service — as near as the telephone — helps them do the job easily and efficiently . . . sees that their hard-to-replace machines stay on the job.

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

CATERPILLAR



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Specify 386
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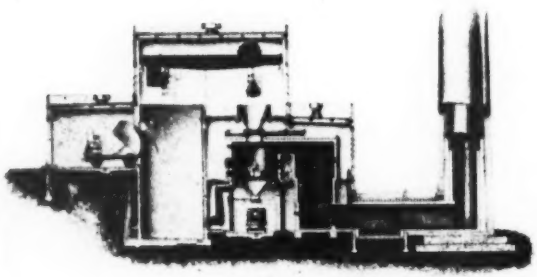
RESEARCH . . . keystone of Nichols incinerator design



Cross section of the modern Nichols mechanically stoked refuse incinerator plant

The modern Nichols mechanically stoked refuse incinerator plant is the end result of improvements made possible by continuous Nichols research. Mechanical stoking and many other important features, all the products of Nichols research, combine to make the Nichols Refuse Incinerator Plant the acknowledged leader in its field.

The large staff of Nichols engineers, designers and constructors is at your service. We invite your inquiries.

NICHOLS ENGINEERING & RESEARCH CORP.

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Hotpoint

Municipal Plan of Food-Waste Disposal for Modern Communities!

In modern communities all over the nation, progressive municipal officials are finding the way to make their communities garbage-free. Planned city-wide installations of Hotpoint Disposalls® have been proved the answer. Improved sanitation through garbage elimination at reduced cost has been the result.

You can dispense with the old-fashioned, odorous, costly, and unsightly "can and wagon" garbage collection system. The Hotpoint Disposall fits under almost any sink; it shreds food waste to sewage which is then automatically washed into the sewer or septic tank. The shredded waste flows readily through sewage systems and adds negligibly to the total sewage flow.

The Hotpoint Municipal Plan of Food-Waste Disposal is based on documented experience and written especially for municipal officials. A request from you will bring the complete story on how you can provide—

- **A convenient, new and modern food-waste removal system.**
- **Health protection to the members of all families.**
- **Fly and rat pest reduction.**
- **Garbage collection cost reduction.**
- **More digester gas for use and sale.**
- **More digested sludge for fertilizer.**
- **Elimination of food waste before it becomes garbage.**
- **Elimination of alley garbage can.**
- **Elimination of garbage collection problems.**
- **Elimination of garbage odors.**
- **True sanitation for your town.**

AND . . . IT SAVES YOU MONEY!

HOTPOINT DISPOSALL®
Eliminates "can and wagon" Garbage Collection System!

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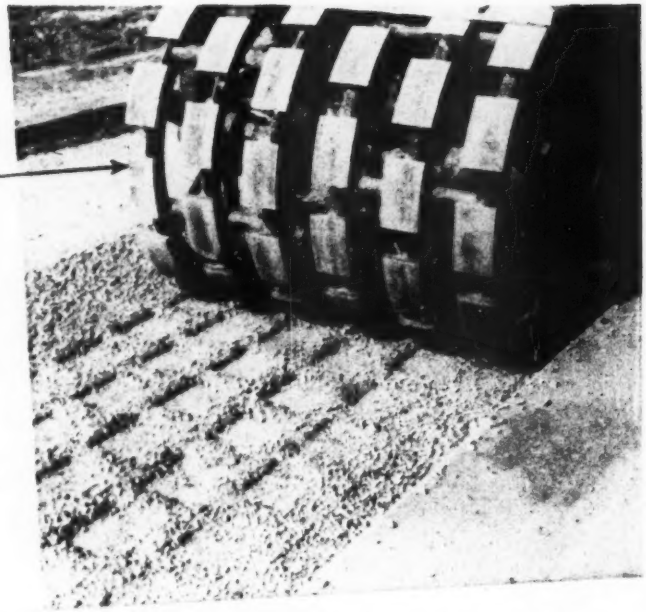
with BUFFALO-SPRINGFIELD

Gardner

SEGMENTED ROLL



Official Tests Prove Buffalo-Springfield Gardner Roll Gives 3 to 7% Greater Compaction with Fewer Passes!

Actual tests, on projects under engineering supervision, reveal these important facts about this revolutionary new roll. When used in place of the smooth-faced guide roll on a conventional tandem, it increases compaction densities 3 to 7%, produces a better textured surface, less susceptible to traffic damage. Further—experience in compacting a variety of materials—including earth fills, stabilized bases and hot and cold mix bituminous—proves fewer passes are required to achieve specified densities.

Here's what T. F. Baun, president of Baun Construction Company, Fresno, California, says about performance of this great new roll on a recently completed California State Highway Project:

"The roll did an excellent job, both from an engineering and cost standpoint. We used it to compact the soil cement treated base, the plant mix base and the finish surface. In addition to saving the cost of other equipment, we got better compaction—in most cases with fewer passes—than if conventional type rollers had been used."

The Buffalo-Springfield Gardner roll is interchangeable with the smooth-faced guide roll on Buffalo-Springfield Tandem models KT-19, KT-20, KT-24B and KT-25B tandem rollers. It is also furnished for previously manufactured Buffalo-Springfield models KT-24 and VT-30.

Investigate the time-and-money saving, quality-improving advantages of the Gardner roll. See your Buffalo-Springfield distributor, or write direct.

There's an Authorized Buffalo-Springfield Distributor Conveniently Located to Serve You

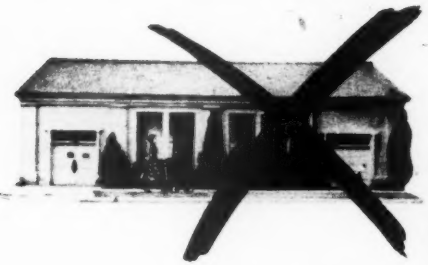
BUFFALO-SPRINGFIELD

THE STANDARD OF COMPARISON

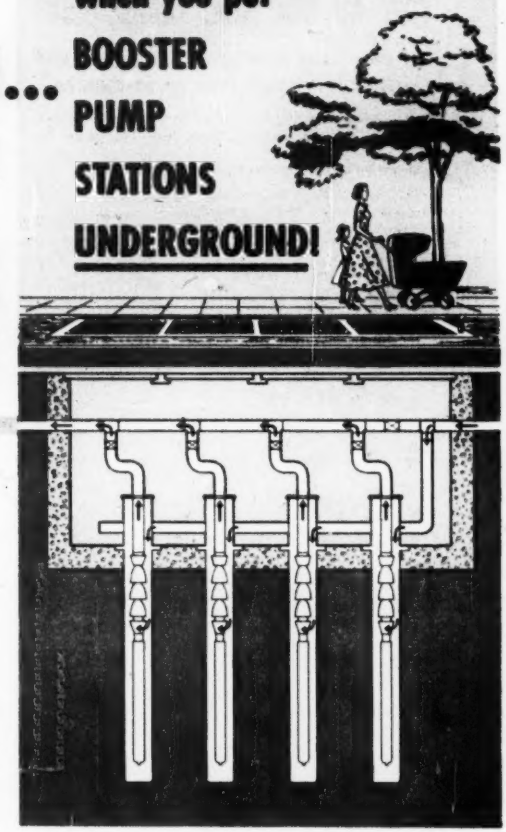
SPRINGFIELD, OHIO

WORLD'S LARGEST EXCLUSIVE MANUFACTURER OF ROAD ROLLERS

COSTS GO DOWN...



when you put BOOSTER PUMP STATIONS UNDERGROUND!



BJ SUBMERSIBLE PUMPS SAVE TAX PAYERS DOLLARS

Why tie up vital operating dollars in real estate, pump buildings, pump house maintenance and personnel when you can secure equal or better pumping performance *at much less cost* by putting your booster pump stations underground? Here's how Byron Jackson submersible pumps can save money:

YOU SAVE REAL ESTATE COSTS . . . there's no need to acquire special land. *Underground* booster stations can be placed beneath any city street or between street and sidewalk. They are out of sight and out of hearing.

YOU SAVE ON CONSTRUCTION . . . an *underground* pump vault can be completed at a fraction of the cost of a surface-type pump house.

YOU SAVE ON OPERATING COSTS . . . BJ submersibles do not require an attendant for oiling, packing inspection, or other daily care. There's no building maintenance either!

YOU'RE IN TUNE WITH THE TIMES . . . *underground* pump stations fit the trend toward concealed equipment and offer greater protection against fire, flood, sabotage and other disaster conditions.

The above sketch shows how four BJ 250 hp submersible pumps can operate in a 6' x 12' x 7' economically built underground vault between sidewalk and street or beneath the street surface. These pumps can be close-connected to the street water main with starter panel located in the vault or unobtrusively mounted on a nearby power pole.

The BJ submersible pump with special submersible motor answers many municipal water pumping problems. Find out how these pumps can cut your pumping costs. Send the coupon for general installation data or write for specific engineering assistance.

Byron Jackson Co.

PUMP DIVISION

Since 1872

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Offices In Principal Cities

BJ Submersible Pump, Dept. 60

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"90° above or sub-zero, we can rely on our HEIL Dump Units

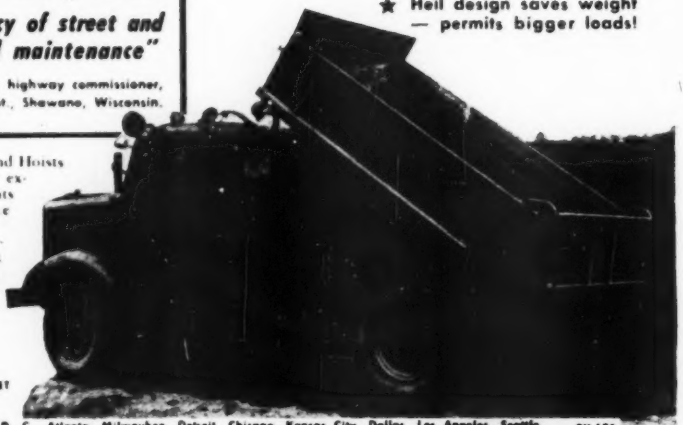
to meet any emergency of street and highway repairs and maintenance"

—says Louis H. Dillenburg, highway commissioner, Shawano Co. Highway Dept., Shawano, Wisconsin.

★ Heil reinforced body can't sag!

★ Heil hoist and pump assure fast dumping!

★ Heil design saves weight — permits bigger loads!



Many an official agrees that Heil Bodies and Hoists pay out in public service. Fifty years of experience equip Heil to build dump units that stay on the job with less maintenance and repair expense.

There's a Heil unit that meets *your* requirements. Heil hoists fit any truck chassis. Hoisting capacities range from 8,000 to 90,000 pounds. Heil bodies are available in all popular sizes.

Specify *Heil* on your next bid for equipment. Write for latest bulletins.

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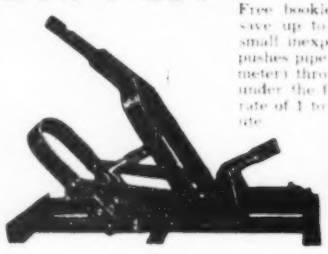
DON'T LET OLD MAN WINTER STOP *Your* PIPE INSTALLATIONS



Free booklet tells how to save up to 80% with this small inexpensive tool that pushes pipe (up to 15" diameter) through the ground, under the frost line, at the rate of 1 to 5 feet per minute.

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Here's the greatest little crawler tractor you've ever seen . . . the new Oliver Industrial "OC-3". It's ideally balanced for most effective loading and dozing . . . engine is mounted *back* so that front of tracks and radiator are practically in line. This better balance gives you 40% more lift with a front end loader . . . does a superior job of dozing and grading because blade is mounted close to the tracks for easier handling . . . precise control! And, operators find this balanced tractor far easier to handle . . . far less fatiguing.

The new Oliver Industrial "OC-3" gives you a full 22 drawbar horsepower . . . plenty of power for jobs in its size. It's ruggedly built for the tough jobs . . . keeps maintenance costs down. Complete accessibility makes servicing easy.

For the complete story on the new Oliver Industrial "OC-3" and how it can help your operations, see your Oliver Industrial Distributor.

THE OLIVER CORPORATION

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A complete line of industrial wheel and crawler tractors

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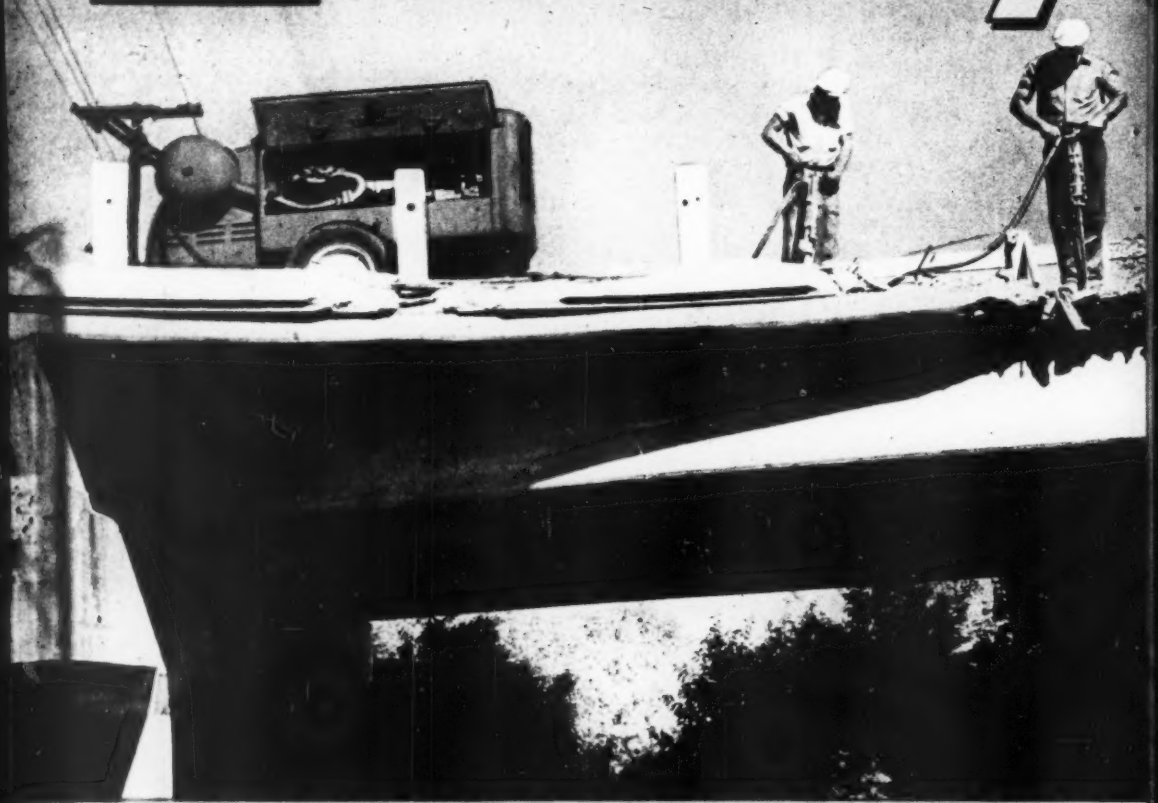

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Le Roi-CLEVELAND Wagon Drills put your deep holes where you want them for better breakage, lower costs. Drill at any angle. 4" bore, powerful force of blow, strong rotation, thorough hole-cleaning action. Higher drilling speed with big bits. For shallow holes, the lightweight DR34 unit is your best bet.

Le Roi Airmasters have 10% to 30% lower piston speed—for less wear, longer life, lower fuel consumption. Heavy-duty Airmaster engine is designed especially for compressor service — it is not just an automotive unit slowed down. Airmasters stay on the job longer, produce more air for less. Sizes, 60 to 600 cfm.

Le Roi-CLEVELAND Stinkers have strong rotation, powerful blow from snappy valve action. Drill more inches per minute. Easy to hold, kickback is reduced. Operators get less tired, drill more feet per shift. Sizes, 17 to 82 lbs., including the popular H10 and H111.

Team cuts costs with plenty of air, plenty of wallop

Le Roi Airmaster Compressor and Le Roi-CLEVELAND Rock Drills and Paving Breakers

HERE'S a team you can't beat — and here's why:

First of all, you've got a Le Roi Airmaster Compressor. Airmaster dependability means air in a hurry — as much as you want — when you want it! Airmaster construction features mean longer engine life, less maintenance, lower operating costs.

Then, you've got Le Roi-CLEVELAND air tools. Their exclusive valve action assures low air consumption — high air pressure at the tools. They really stand up, too — break more pavement, dig more clay, drill more rock, tamp more fill.

Yes, sir, the Le Roi Airmaster, Le Roi-CLEVELAND tool team pays off with top satisfaction at bottom costs. Job data from all over prove that.

Have your nearest Le Roi distributor put this team through their paces for you. Visit him now. Write for bulletins.

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Le Roi-CLEVELAND Breakers and Spades pack plenty of punch for speedy work in the hardest concrete or stiffest clay. Protective air-cushion in front end assures long life. Well balanced for easy handling. That's why operators like them — do more work with them. Sizes, 18 to 80 lbs.

Tractair is a combination tractor-105 cfm compressor that can be equipped with a wide variety of attachments. Does the work of specialized equipment — breaking, drilling, digging, tamping, loading, lifting, backfilling, snow-plowing, etc. Saves you money on initial investment and on job costs.

C-139

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Get Booklet shows the incredible saving Hydrauger makes in both time and cost

BORES	2" through 24"
DISTANCE	up to 250 feet or more, per setting, depending on earth formation being bored.

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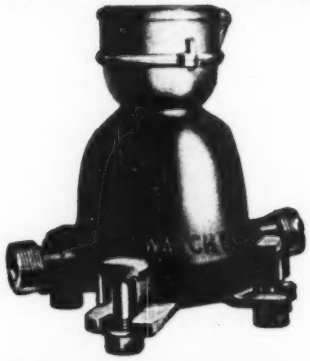
*Trade Boring Tool

WORTHINGTON-GAMON



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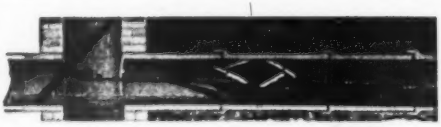
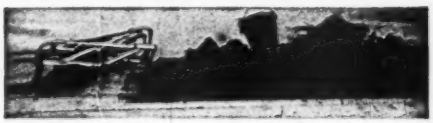
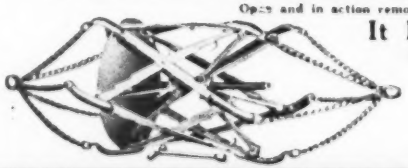
EXPANDING ROOT CUTTER & SEWER CLEANER





Open and in action removing roots and caked sediment like this.



It Fits in on Every Sewer Cleaning Job
Adjusted in 30 seconds to fit any sewer from 8 to 30 inches.

Will clean the entire sewer wall, top and sides as well as the bottom cutting and removing the roots and caked sediment, putting the sewer section in almost 100% clean condition.

Write for our new catalog on complete sewer cleaning equipment.

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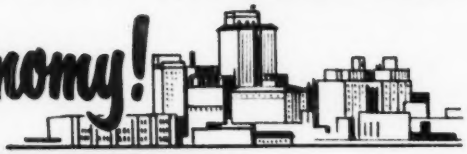
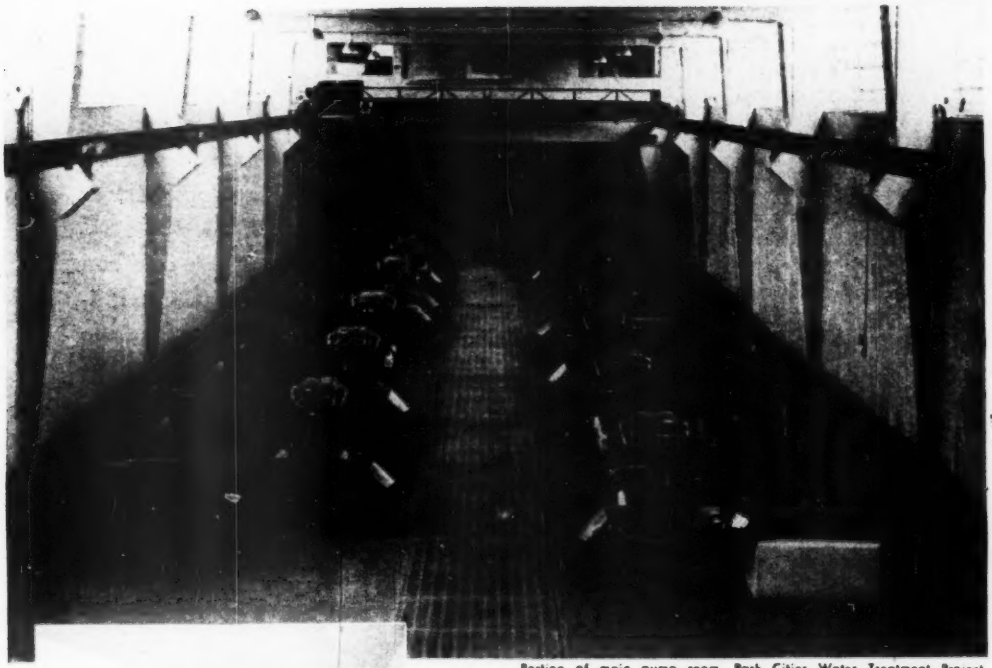
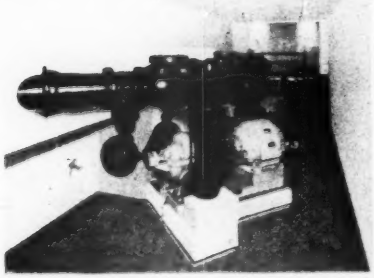
Now...Dallas Park Cities *are pumping with Economy!*





Portion of main pump room, Park Cities Water Treatment Project. Shown are 13 of the 22 Economy Pumps installed on this project.



...low in University Park Booster Station, part of the Park Cities project. These Economy Pumps boost the pressure going to the overhead storage tank, located 5 miles from the treatment plant.

in new Park Cities, Texas, Water Treatment Plant

Economical operation over a period of years was a primary requisite of the pumps for Park Cities Water Treatment Project, Dallas. In selecting pumps, Powell & Powell, Consulting Engineers, drew up specifications which took into consideration cost of equipment, efficiency of each unit and efficiency of units operating in series, plus rigid structural requirements and refinements of mechanical detail. Under this very exacting evaluation formula, Economy Pumps, designed especially for water works service, supplied by the Lone Star Pump and Machinery Co., were selected, on the Dallas County project.

It pays to specify Economy Pumps for water supply. For detailed information and illustrated catalogs write today to Dept. AB-1.

Economy Pumps, Inc.

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33 Hyster Tractor Tools

...include a complete line of WINCHES, YARDERS, TRACTOR DONKEYS*, CRANES, the LOGGING SULKY* and ARCHES; GRID ROLLERS for bituminous road salvage; and HYSTAWAY*, the 5 in 1 tool that includes dragline, clamshell, crane, shovel and backhoe.

Hyster Tractor Tools make money for their owners in construction, logging, oil fields, road work, and in many branches of general industry and the government.

For 22 years Hyster has made tractor tools for use with Caterpillar track-type tractors. Mounted on the big yellow machines, dependable Hyster tractor tools are at work on the roughest, toughest jobs all over the world.

Hyster tractor tools are sold and serviced by more than 700 Caterpillar-Hyster dealer stores around the globe.

***MORE THAN 40,000 SATISFIED OWNERS OF HYSTER TRACTOR WINCHES**

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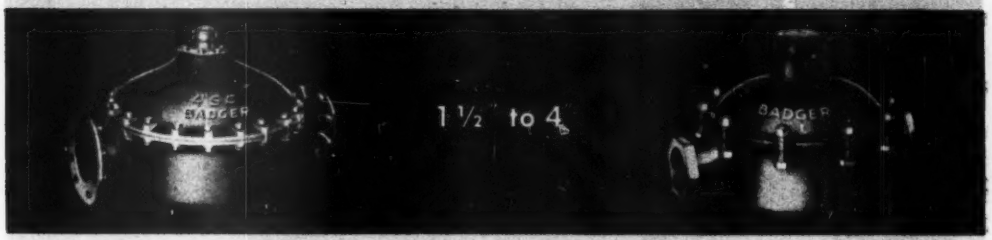
there's a RIGHT SIZE and RIGHT TYPE



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for every water meter service

Badger makes the meters you need . . . any type, any size, for any water-measuring job in home or industrial service: 5/8" to 1¼" home service meters; 2" to 12" Turbine (Current) Meters; 2" to 10" compound meters and industrial meters...of many sizes and types...also time-and-money saving accessories vital to efficient installation and servicing, including famous Badger Meter Testing Machines. For complete meter service, it pays to contact Badger.

"MEASURING THE WATER OF THE WORLD"

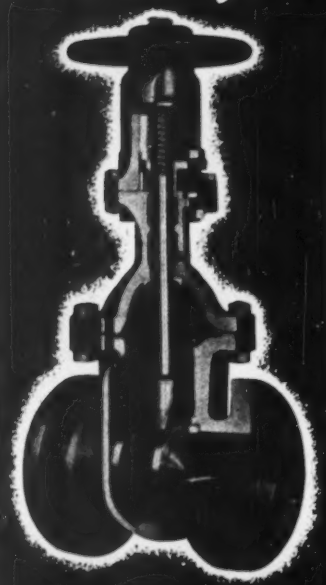
First for Accuracy • Low-Cost Maintenance • Durability • Sensitivity

BADGER *Water* METERS

BADGER METER MFG. CO., Milwaukee 10, Wis.

Branch Offices: New York City • Philadelphia
Worcester, Mass. • Savannah, Ga. • Cincinnati • Chicago • Kansas City • Waco, Texas
Salt Lake City, Utah • Guthrie, Okla. • Seattle, Wash. • Los Angeles

How Darling features prevent trouble and expense



UNIFORM WEAR DISTRIBUTION

A LARGE percentage of valve leaks, lost time, expense, can be blamed on uneven wear—the uneven wear caused by repeatedly exposing the same disc and seat areas to concentrated pressure, fluid flow, and resultant galling from operation.

For years such leaks were considered the result of normal, expected wear. But the unique design of Darling Double Disc Parallel Seat Gate Valves has proved that uneven wear can be prevented. The two valve discs shown in the cutaway view, and again in the removed inside assembly, are separately and independently hung and free to revolve through their 360°. Valve operation aids the action during the lowering and raising of the disc assembly. The discs never seat twice in the same position and obviously wear is bound to be uniform. This results in tight closure even when the disc faces are worn.

Hundreds of Darling gate valve users have learned by experience that uniform wear distribution results in longer service life and correspondingly lower maintenance cost.

DARLING VALVE & MANUFACTURING CO.
Williamsport 10, Pa.

Manufactured in Canada by The Canada Valve & Hydrant Co., Ltd. Brantford 7, Ont.

Outline your service requirements and get complete information on Darling Valves of the proper type. Or, send for the complete 300-page Darling Catalog No. 17M. It describes Darling Valves of all types for every normal or unusual service, and for pressures up to 1500 pounds. It's full of helpful information . . . Yours for the asking.

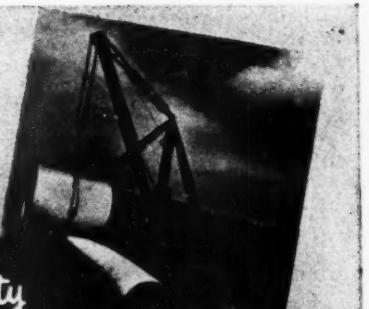
This advertisement is one of a series showing how the unique Darling Fully Revolving Double Disc Parallel Seat Gate Valves answer the following critical operating problems:

- *Positive, easy closing—regardless.*
- *Automatic adjustment for valve body distortion.*
- *Elimination of disc to seat friction and galling.*
- *Uniform wear distribution.*
- *Extreme simplicity.*
- *Greater service life.*
- *Simplified maintenance.*

CORROSION RESISTANT VALVES

In addition to conventional iron, bronze and steel constructions, Darling specializes in valves for any corrosive fluid: iron body valves with special alloy trim; iron body, rubber lined with special alloy trim; all bronze and all special alloy. Darling's 50 years of experience in meeting unusual requirements is always at your service.

THE VALVE MARK OF QUALITY . . . WATCH FOR IT



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IMPORTANT AMERICAN CITIES INSTALL

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Freedom from:

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- ★ Maintenance and repairs
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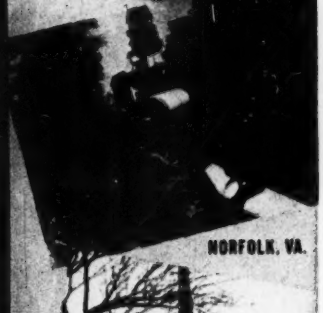
- ★ Corrosion or deterioration



LOCK JOINT PIPE COMPANY

Est. 1905

P. O. Box 269, East Orange, N. J.

Pressure Pipe Plants: Wharton, N. J., Turner, Kan., Detroit, Mich., Columbia, S. C.

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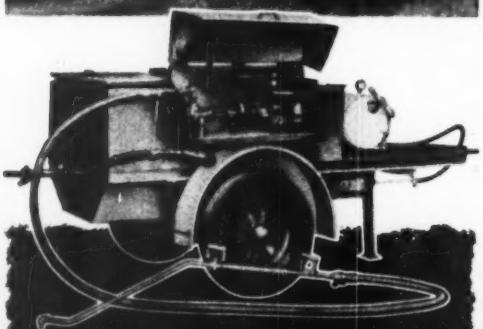
SCOPE OF SERVICES—Lock Joint Pipe Company specializes in the manufacture and installation of Reinforced Concrete Pressure Pipe for Water Supply and Distribution Mains in a wide range of diameters as well as Concrete Pipes of all types for Sanitary Sewers, Storm Drains, Culverts and Subaqueous Lines.



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WITH A LITTLEFORD

84-HD

Tar & Asphalt Kettle

It's a known fact that the Littleford 84-HD Kettle is the lowest cost operating unit Street, Road and Highway Departments have ever used. Not only does it **Heat Faster** but it speeds up melting of materials by the use of two patented features—"Screened Reservoir" and "Continuous Heat System." Here's one Kettle that cost less to own over the years, as there are no heat flues to burn out or replace. Many 84-HD Kettles have been operating for years without a single dollar being spent for repair parts. Road repairs are made easy with a Littleford 84-HD Kettle and at extreme low cost. Motor Spray Attachment or Hand Spray Attachment can be had on this unit. For further details write for Bulletin No. 1.

LB LITTLEFORD

LITTLEFORD BROS., INC.
500 E. Pearl St., Cincinnati 2, Ohio

FILTER SAND AND GRAVEL

Produced from an inland pit hence free from river contamination and foreign matter.

Shipment in bulk or bagged.

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Prompt Shipment

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P. O. Box No. 307 Phone: 193

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Good, exclusive territories are open for fast-selling "FERRO" signs. Every city needs these highly visible porcelain enamel signs.

"FERRO" signs are nationally known, tested, *proved*. Finest quality steel, deeply embossed, finished in brilliant, permanent porcelain enamel.

If you have allied lines and a following, write today for further information.

FERRO ENAMELING CO.
1100—57th Avenue Oakland 3, Calif.

The installations of Superior and Atlas Diesels are so numerous you can find them practically everywhere, in all types of service under all sorts of operating conditions.

And, month after month, the list grows as new Superior and Atlas Diesels are installed to supplement present plant capacity, and to provide new sources of power.

Because so many of these efficient engines are in use in so many localities, it's easy to obtain detailed records of performance and acceptance—

- **How one community saved $10,000 in six months with a Superior Dual-Fuel Engine.**
- **Why so many purchasers keep on adding Atlas and Superior Diesels as demands increase.**
- **What factors made it possible for a Superior Diesel power plant to pay for itself in two years.**
- **Where a town paid off its original three-engine plant investment, and the cost of three additional Superior Diesels, in ten years.**

Throughout the United States, and in Latin America too, the engineering and service representatives of the Engine Division will advise on the selection of Atlas and Superior Diesels for every purpose. You can take advantage of the operating economies and dependable performance of Superior and Atlas Diesels by writing or calling the Engine Division for the location of the nearest regional office.

Superior ENGINES

ATLAS Imperial DIESEL ENGINES

THE NATIONAL SUPPLY COMPANY

ENGINE DIVISION

Plant and General Sales Offices: Springfield, Ohio

DIESEL ENGINES • DUAL FUEL ENGINES • GAS ENGINES

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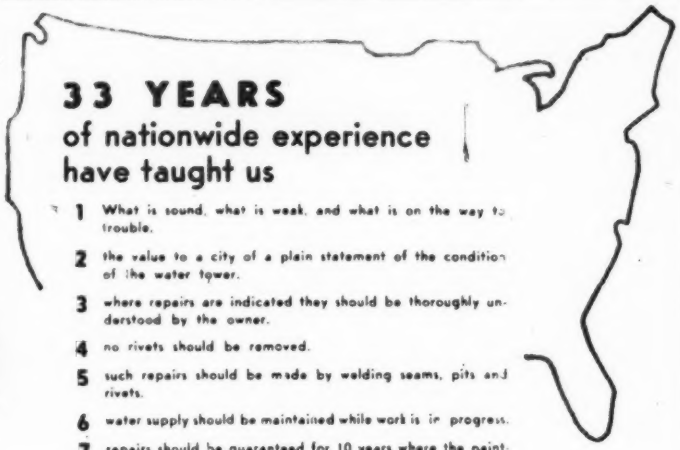

33 YEARS
of nationwide experience have taught us

1. What is sound, what is weak, and what is on the way to trouble.
2. the value to a city of a plain statement of the condition of the water tower.
3. where repairs are indicated they should be thoroughly understood by the owner.
4. no rivets should be removed.
5. such repairs should be made by welding seams, pits and rivets.
6. water supply should be maintained while work is in progress.
7. repairs should be guaranteed for 10 years where the painting is every five years.
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10. It's better to write us today.

DIXIE TANK & BRIDGE CO.

3523 Lamar Ave. P. O. Box 14 Memphis 1, Tenn.

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THE QUALITY SIGN LINE

Miro-Flex signs conform to standards of the U. S. Public Roads Administration. Available either plain or reflectorized with plastic or glass buttons or reflecting background. They are uniformly embossed on zinc-coated, Bonderized steel and finished in magnetically sprayed baked enamel. Tests prove this process insures longer life and resists rust under extreme conditions. For signs of quality, choose Miro-Flex. Special signs available on request. For illustrated catalogue write...

THE MIRO FLEX CO., INC.

1824 EAST SECOND STREET WICHITA, KANSAS

This light-duty model licks a lot of snow and ice, too!

The popular LD pays out in all seasons because it's a true 4x4...it safely handles jobs that roll up excessive repair costs for ordinary vehicles

When the rains come and the going is soft, the LD can travel while other trucks must stay at home. Its g.v.w. is 14,500 lbs.

Pays out on smooth highway, too! For general hauling or patrol work, the LD is a growing, economical favorite.

Many snowfalls and icy conditions are easily brought under control by this *light-duty* LD. The center differential of the LD eliminates stresses. That, plus other reasons, is why the LD works on assignments that often shove conversions and conventional trucks into the repair shop. Proof, too, of the LD's superiority in all seasons on a great work range. Ask FWD or your FWD distributor for facts. The FOUR WHEEL DRIVE AUTO CO., Clintonville, Wis. *Canadian factory*, Kitchener, Ontario.

Built by the Makers of America's Foremost Heavy-Duty Truck

You buy more than a truck When you buy an FWD

Extra-traction **and** ***proper distribution*** **of weight and power give you the following:**

- **Ability to work more days per year**
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- **Lower maintenance costs (up to twice the front tire life, for example)**
- **Up to twice the truck life**

World-wide Sales and Service

with GOLDAK EQUIPMENT
you KNOW you get PPD

MODEL 620
BOX & VALVE LOCATOR

Pin Point Detection of Goldak's Model 620, saves you time and money, with immediate location of Buffalo Boxes, Valves, Covers and Buried Metals.

Untiring operation, weighs only 8 lbs. Sturdily constructed, all-weather use. High quality parts assures maximum sensitivity, low operating and nominal replacement costs.

you get PPD* with Goldak Locators

*PIN POINT DETECTION

write for FREE literature and name of nearest dealer

The name GOLDAK, on electronic instruments, eliminates guesswork . . . your assurance of Pin Point Detection at all times, in any kind of weather. Throughout the world, with companies who need instruments that are accurate and durable, first choice is GOLDAK.

MODEL L46
SENIOR
LEAK DETECTOR

Detect costly leaks in water and low viscosity fuel lines, in their exact position. Completely portable, simple to operate. Latest electronic improvements and high quality parts, assures unequalled performance. Save time and labor, eliminate costly leakage with Goldak Model L46.

you get PPD* with Goldak Locators

The GOLDAK Company
Leading Makers of PIPE LOCATORS
Since 1933

1544 W. GLENOAKS BLVD.
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GAS STORAGE TANKS

● Whether you want conventional high-pressure units or something *special*—send us your inquiries. COLE can build you the kind of high-pressure tanks or vessels you require—any size, any shape, any metal. Our experience (of almost a century) in the design and fabrication of metal tanks may be of help to you.

Send us your inquiries for tanks of all types. Write for free catalog— "Tank Talk"

R. D. COLE MFG. CO.
NEWNAN, GA.

"GUNITE" CONCRETE (Since 1915)

SPECIALISTS IN CEMENT GUN WORK

RESERVOIR LININGS (NEW AND OLD) ● CONCRETE AND MASONRY REPAIRS ● STEEL ENCASEMENT ● FIREPROOFING ● STEEL COAL BUNKER, STACK, HOPPER, AND PLATE LINING ● SEWER LINING AND REPAIRING ● CANAL, DITCH, AND DRAIN LINING.

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See our catalog in Sweet's

470 FOURTH AVE.,
NEW YORK 16, N. Y.

Is Information Headquarters

for municipal, waterworks officials, and engineers wanting further details on printed matter from the manufacturers advertising in these pages. Our Reader Service Department will be glad to forward any literature or special requests you mail to us at the above address.

THE AMERICAN CITY

Get the Drift?

SOME SHOVELING—and when a blizzard ties up traffic, it takes shoveling like this to get cars and buses going again. That's an International TD-9 crawler doing the work.

They do in Columbus...with a tough little International TD-9

Thanksgiving Day last winter brought Columbus, Ohio, a paralyzing blizzard that stopped normal living completely till strong men and machines like this International TD-9 crawler dug the city out from under.

The TD-9 is one of a complete line of rugged International crawlers. Size for size, each model has the sheer dogged power and the easy-handling maneuverability to move more snow in less time. And with International's exclusive starting system, they all get going fast even in zero weather.

For the inside information on how International power can serve your community and help you get more work done for every tax dollar spent, check with the International Industrial Distributor in your area. Check, too, on his service facilities. Get the whole low-down . . . and get International *"Power that Pays!"*

INTERNATIONAL HARVESTER COMPANY, CHICAGO 1, ILL.

POWER THAT PAYS — **INTERNATIONAL**

INTERNATIONAL HARVESTER

Here are the Answers About Automatic Food Waste Disposers

A collection of discoveries relating to municipal experience with this appliance

THE unquestioned fact that stale garbage has a tremendous amount to do with the control of rats and flies, and the cost of municipal service, makes discussion of automatic food waste disposers mandatory for city sanitation engineers.

How advisable are they, relative to other methods of garbage elimination? How foolproof are they? How do they affect sewage load? What does the public think of them? How do they contribute to really effective control of disease?

Discouraging flies

In stale garbage, fly larvae (or maggots) grow to full maturity *from freshly laid eggs* in as little as 3½ days—which is the average interval between garbage collections in American towns! No wonder a government official called garbage collections the chief obstacle to effective fly control. And flies are disease carriers—spread both dysentery and typhoid.

Rats at Work

Stale garbage is as much a feeding place for rats as for flies. And rats destroy nearly 3 billion dollars' worth of goods a year; have caused more deaths than all the wars in history. They carry bubonic plague, typhus, infectious jaundice, tularemia, ratbite fever.

If garbage is to be collected, it must be oftener than at present if flies are to be controlled; and almost ironclad containers will be musts to discourage the prolific and deadly rat.

Garbage Eliminated at the Source

Even apart from the unpleasantness of handling stale garbage, these factors indicate that the time to get rid of food waste is before it becomes stale, before it must be *stored* within reach of flies or rats. Such a view led the Superintendent of Building and Safety of a large Michigan city to call garbage grinders *the only sanitary method of disposing of garbage.*

The effect of garbage-bred pork on the incidence of trichinosis (1,000,000 cases a year) is still more ammunition against other methods.

Cost of Disposal

Other methods include collection and delivery to a central plant; the sanitary fill method; and the garbage farm method. While costs compare well with all but the garbage farm method, this is now considered relatively impracticable. The other two, unlike domestic disposers, depend on labor costs.

Even collection costs, of course, are relative, depending on the number of collections. Adequate collections would be higher than at present, according to the indications above.

According to at least one major survey, domestic disposers are not at all out of line with respect to cost; and the many advantages offered by them make them definitely practical in regard to operating expense.

Effect on Sewers

The total sewage increase is only 2% or 3% in sewers handling domestic sewage. Authorities say this small increase has no adverse effect.

Even particles of high specific gravity, according to some rigorous tests, are no great danger; for present design standards, satisfactory transport of waste is achieved. Where egg shells used in testing tended to deposit, their clogging effect increased the velocity of flow, thus clearing away the deposits.

Grease presents a problem only when hot; however, the practice of throwing hot grease down the drain is not unknown even where disposers are not installed, a matter for public education.

Durability of Disposers

Disposers are unbelievably rugged. In one case, two disposers were kept in operation for a year, and fed refuse equivalent to that from the average family over ten years. Glass, sand, dust, ashes, and nails were also fed in. At the end of the test, the disposers were still running quite satisfactorily, though somewhat slower.

Further Information

For more information, write Mullins Manufacturing Corporation, Warren, Ohio. Mullins Manufacturing Corporation is the world's largest makers of steel kitchens, and a recognized authority on kitchen equipment. (ads)

3 WAYS BEST!

The long, service-free life and easy, efficient operation of the Youngstown Kitchens Food Waste Disposer, resulting largely from the three outstanding advantages listed below, will enable you to recommend the improved Youngstown Kitchens Food Waste Disposer with confidence to the people of your community.

1. This improved Disposer is three ways best. It is designed to take food waste continuously to eliminate the awkward "stop-and-go" feeding which requires interrupted loading of the Disposer when waste quantities are large.

2. The self-reversing motor changes the direction of the water-swirl, too, with each use of the Youngstown Kitchens Food Waste Disposer—assures complete self-flushing action, complete self-cleaning.

3. A special self-reversing motor changes direction of shredder rotation with each use. This puts two complete sets of shredding edges to work alternately, in effect doubling the blade life.

WRITE FOR MORE INFORMATION!

Mail your request to the address at the end of the article on this page. A Youngstown Kitchens specialist will be happy to help.

Youngstown Kitchens

MULLINS MANUFACTURING CORPORATION • WARREN, OHIO

Youngstown Kitchens are sold throughout the World

It's good business
at any time to

GET THE MOST OUT OF YOUR METERS

IT'S ESPECIALLY TRUE NOW!

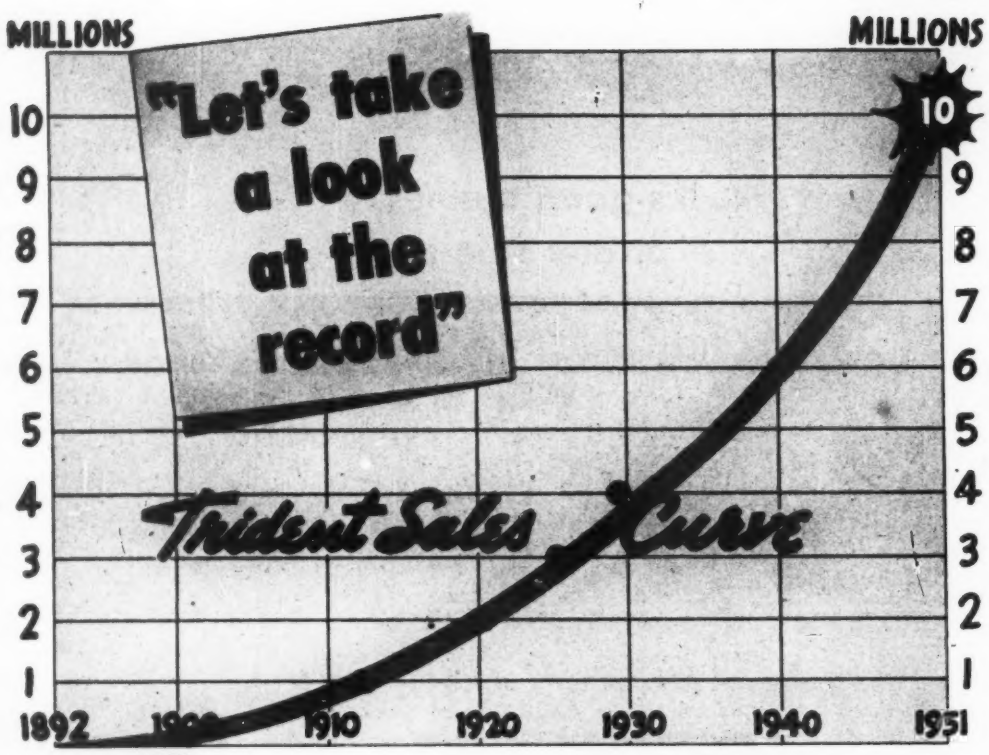
Common sense dictates good meter care. Especially now, with new water meters in short supply it is imperative that existing meters be kept in good condition.

Rockwell meters are easy to maintain; to keep operating at top accuracy. They can be renewed and modernized through the installation of *interchangeable parts,* that in many cases incorporate the latest design advances.

To put new life into your present Rockwell meters, we have built up a larger than normal stock of replacement parts. Your orders for these parts will receive prompt attention. Write today for up-to-date fully illustrated catalogs.

You Can RELY ON ROCKWELL

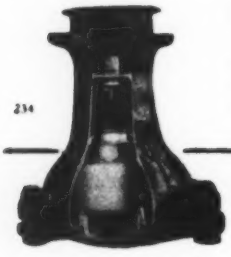
ROCKWELL



Ten million TRIDENT Meters have been bought...

10,000,000 Trident Meters have been bought because from the beginning Tridents have been accurate and economical.

An 1898 Trident Meter made BETTER THAN NEW with modern, improved interchangeable parts.



234

Accuracy is the first essential of any meter. Tridents have not only proved themselves to be accurate but, because of their basically correct design and the skilled workmanship of their manufacture, maintain their accuracy for long periods of hard service.

After long service, any piece of machinery is bound to show wear and require maintenance. Economy of maintenance, therefore, is of utmost importance, particularly in meters, whose numbers in any one installation may run into the thousands. Trident meters, because of their simplicity, are easy to maintain; and because improved parts fit easily into old casings, costly depreciation is eliminated.

Here are the two fundamental reasons for the record sales of Trident Meters. A third is the superior quality of Service given Trident users by a trained staff of Sales Representatives.

The fact that meter users buy more Tridents than any other make proves that Tridents are YOUR best buy for accuracy, economy and service.

NEPTUNE METER COMPANY • 50 West 50th Street • NEW YORK 20, N. Y.
Branch Offices in Atlanta, Boston, Chicago, Dallas, Denver, Los Angeles, Louisville, North Kansas City, Portland, Ore., San Francisco.
NEPTUNE METERS, LTD., Long Branch, Ont., Canada

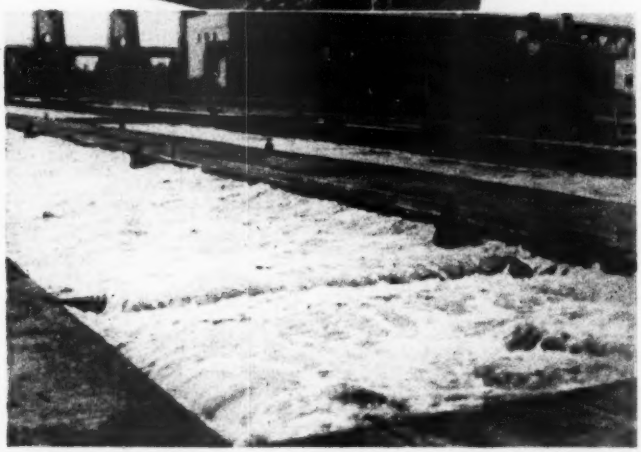
Flame-Spalled Diffuser Plates Improve Sewage Aeration

New York City restores porosity to clogged diffusers in aeration tanks

By RICHARD C. FRENCH
Engineer in Charge
Mechanical and Structural Section
Bureau of Sewage Disposal Operations
Department of Public Works
New York, N. Y.

AT TWO of the New York City sewage-treatment plants, Wards Island and Bowery Bay, the aerator diffuser plates, which normally would have been replaced some time ago because of clogging, are still in satisfactory operating condition as a result of systematic thermal spalling, a new method developed by the writer for removing clogging material.

At this time, about two years after the first spalling, both plants are operating at virtually new diffuser-air pressures, i.e., less than 7 pounds per square inch. The diffusers at Bowery Bay required only the removal of the top clogging. At Wards Island, however, owing to bottom clogging, some additional treatment was necessary to keep pressures down. Wards Island diffusers have now passed about 5,500,000 cubic feet of air per diffuser plate since the



Top: This is the way the aeration tank operated in the spring of 1949; clogged diffuser plates allowed little air to pass even at full blower pressure.

Center: The spalling apparatus in operation.

Bottom: Here is the same tank in the fall of 1951 passing the full amount of air at low pressure; spalled plates made the difference.

first thermal spalling, or more than the amount that caused very serious clogging prior to spalling.

At Wards Island there are 16 aeration tanks with four channels in each. The original installation, which took place in 1937, consisted of 36,000 Norton plates with 20 permeability. These were arranged in two rows in each channel. Some clogging of these diffusers began in 1939. During the following years, as clogging became severe, the diffusers were hosed, brushed, and treated with caustic soda, but with only partial recovery of short duration. Air rates varied between 2 and 1 cubic feet per minute per diffuser plate during this period.

In 1946 one row of plates was scaled off and one row was replaced with Carborundum plates with 40 permeability. These diffusers, which were passing from 3.5 to 4.5 cubic feet of air per minute each, became clogged to a considerable extent after a year and a half. Washing and scrubbing with brushes and ammonia showed only temporary recovery. By the spring of 1949, the situation had become serious. The full blower pressure of over 9.5 pounds per square inch would not pass enough air through the diffuser plates, and the treatment of sewage was adversely affected.

Dry-Sand Blasting

Dry-sand blasting of the diffuser plates was tried on one channel only in each of two aeration tanks, and wet-sand blasting was tried on all four channels in another tank. Results were reasonably good, but costly and again of short duration. Later investigations disclosed that quicker clogging occurred, owing to the fact that the pores in the plates were filled with powdered sand from the sand blasting and that some clogging material remained.

It seems that, as a rule, most methods of surface washing result in imbedding the clogging material, and sand or chemicals if they are used, deeper into the plates. This spreading out of the clogging material results in opening up the pores somewhat and in consequent temporary improvement in the porosity of the plate. Since the pores are still comparatively small, it takes only a short time to reclog them.

In a search for a better method of combatting clogging, it occurred to the writer that this could be accomplished by systematic thermal spalling. Accordingly, the Linde Air Products Company was induced, at no cost to the city, to try this method in its laboratory and at the Wards Island plant, using the equipment that it manufactures.

The tests were satisfactory. It was then decided to spall all the plates at the Wards Island plant. In order to gain more experience in using this new method, a contract which was not to exceed $10,000 was let in May 1949. Additional work was to be undertaken later if the results of the work under this first contract proved to be satisfactory. With the amount of thermal spalling done under this first contract, the plant had no trouble in successfully treating the sewage until the work of the second contract was started on November 21, 1949.

First Contract — Partial Spalling

In order not to damage the plates, the rate of spalling was fixed at an average depth of approximately 1/40-inch per pass, which would take about 20 seconds per plate. Three men were required to do the spalling. They averaged about 540 passes per 8-hour shift for most of the job. Eight-tenths of a cubic foot of both oxygen and acetylene were used per plate per pass. The total cost of the first contract for 56,350 plate passes of thermal spalling on the 18,000 diffuser plates, including about $1,400 for equipment, was $9,801. Because of the limit of $10,000 in the amount of money available under this contract, restoration of the plates was not complete, but the condition of the plates was improved enough to allow the plant to treat the sewage satisfactorily during the critical summer months. Pressures required were still comparatively low, about 8.5 pounds per square inch, when a second contract was awarded in the fall.

During the first contract, two shifts of men were used, one in the morning and one in the afternoon. Work started on May 31, 1949, and was completed July 22, 1949.

Experience gained during this first contract showed that the amount of spalling allowed per pass was too conservative. In the next contract, each pass of thermal spalling was adjusted to take off twice as much without harm to the plate. This resulted in a considerable saving, since the labor and time required were practically the same.

Second Contract — Completion of Thermal Spalling

The second contract was similar to the first, except that two sets of spalling equipment were used. Heavy thermal spalling cuts about 1/20 inch per pass were taken using about 1.33 cubic feet each of oxygen and acetylene per plate per 20-second pass.

Two men were employed for each machine, with a fifth man to assist. Work was started on November 21, 1949, and completed on January 17, 1950. There were 40,436 plate passes at a cost of $6,874.

The depth of clogging varied with the tanks and with the four channels in each tank. In general, the depth of clogging was deeper in the inlet, or first channel, than in the fourth channel.

A summary of the amount of surface removed from the diffuser plates during both spalling contracts indicates the following:

Nineteen channels received the equivalent of three, or less, heavy thermal spalling cuts, or about 0.15 inches; 22 channels received the equivalent of 4½, or less, heavy thermal spalling cuts, about 0.22 inches; 14 channels received the equivalent of six, or less, heavy thermal spalling cuts, about 0.29 inches; 7 channels received the equivalent of 7½, or less, thermal spalling cuts, about 0.33 inches; 2 channels received the equivalent of 9 heavy thermal spalling cuts, about 0.42 inches.

It can be seen that the diffusers in most of the 64 channels still have enough thickness for additional spallings.

Problem at Wards Island

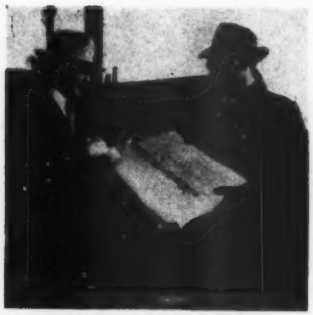
It was found that, at the Wards Island Sewage-Treatment Plant, the recovery of some of the diffusers was not as good as expected. The writer believed this to be due to bottom clogging, although a visual inspection did not indicate uniformly heavy deposits on the bottom of the diffusers. The reason for the spotty distribution of the bottom-clogging material is due apparently to its being deposited mainly at the passages through the diffusers, which originally were the most effective in passing air. As a check, a diffuser plate was taken after the top clogging had been completely removed and a thin water paint was poured in a wide band across the top of the plate, the plate turned over and the paint poured in another band at right angles to the first. After the paint had dried the plate was broken; it was found that from the spalled side the paint had penetrated to the bottom, but not through, and that from the bottom surface there was practically no penetration.

With the top clogging removed, by thermal spalling it was possible to remove the bottom clogging with the writer's jet-washing method, using wetting agents and detergents. The combination of thermal spalling and jet washing reduced the pressure to that required for new plates, i.e., about 6.8 pounds per square inch. Jet washing has been repeated at Wards Island every 4 to 6 months, depending upon how long it takes for the pressure in a tank to rise about half a pound. The cost of this washing was approximately $8,000 for the first two-year period. Since the tanks operated at practically

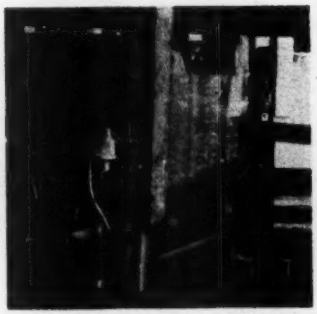
(*Continued on page 000*)

City-State paving project initiates the use of a rubberized admixture in both the binder and the wearing surface of the street

St. Paul's Rubberized Street



City Engineer George Shepard, left, examines a 50-lb. package of rubber.



Three mixers like the one shown above melt and blend rubber with asphalt.

IN ST. PAUL, Minn., about 1,900 feet of a one-mile resurfacing project is being treated with a synthetic rubber admixture. The addition of the rubber is expected to prolong the resiliency of the pavement and prevent early cracking and deterioration.

The plans for resurfacing of the street, designated as a state trunk highway, were prepared by engineers of the City Department of Public Works. The Minnesota Highway Standard Pavement specifications were used.

Rubber Mix Details

The rubber replaces an equal volume of asphalt normally used in the mixture. The rubber amounts to 10% of the asphalt cement used in the binder course and 15% of that used in the wearing surface. The rubber was supplied by the Nagatuk Rubber Company, a subsidiary of the U. S. Rubber Company. It carries the name of Surfa-Sealz, and is supplied in 50-pound solid packages. In this form, it is heated to 325° to 450° F. and blended by circulating pumps with the asphalt cement to make a homogeneous product. Larger quantities of the rubber compound can be furnished in tank-car lots. The rubber contains not more than 16% by weight of hydro-carbons. It has a penetration at 77° F. of 40 to 85. The binder course uses aggregate with a maximum size of ¾ inch and has between 4.2% and 5% asphalt cement and rubber. The wearing surface requires between 5.5% and 6.2% asphalt cement and rubber.

Handles Easily

The asphalt with its rubber admixture produces a mix that the standard asphalt-spreading equipment handles easily. In this case, a Barber-Greene spreader placed the course and a Buffalo-Springfield three-wheeled roller compacted it. The mixture appeared "rich" and compacted easily.

City Engineer George Shepard hopes that the use of the rubber will minimize the occurrence of cracks in the surfacing and that it will add life to the pavement. On old pavements he has noted that the asphalt often entirely loses its resiliency, and extracted samples show extremely low penetrations. Mr. Shepard anticipates being able to use the rubber-asphalt combination on other more extensive street-resurfacing programs in St. Paul.

The surfacing will receive a seal coat of RCS-3, at the rate of 0.2 gallons per square yard. This is mixed with an additive to account for 0.3% of the cutback asphalt volume and covered with crushed aggregate meeting this sieve analysis:

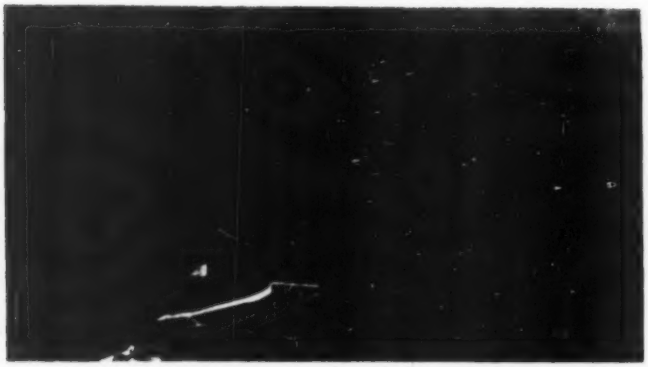
Screen Size	*Percent Passing*
½ inch	100
⅜ inch	90–100
#4	10–40
#40	0–5

The aggregate is placed at a rate varying from 18 to 22 pounds per square yard. This seal coat is renewed periodically to protect the lower surface courses and to provide a good non-skid surfacing.

The street-surfacing work forms a part of the Department of Public Works' program, which on the state trunk-highway routes is being financed by the Minnesota Highway Department.

The rubber-asphalt mix handles easily with standard equipment.

What Good Watershed Management



This is one of the reservoirs that good watershed management is protecting; no eroding farmlands send down silt to rob the reservoir of its capacity.

Properly engineered water-works management is a city's most useful tool to prolong the life of a surface-water course

By WENDELL R. LaDUE
Superintendent and Chief Engineer
Bureau of Water and Sewerage
Akron, Ohio

IN NO OTHER water-works structure is the useful life easier to prolong by simple preventive maintenance than is the water reservoir. One scarcely can doubt that all designers and builders of reservoirs in the future must include in their plans details of silt control and watershed management, for this "up-stream engineering" results in the immensely profitable item of prolonged active life of the reservoir. Nature will help if man is willing.

The purpose of watershed management is to maintain the relationship between water and the condition of land resources so that all watershed resources may be utilized to their fullest advantage and economic extent.

Our problem at Akron has been the development and control of the Cuyahoga River watershed, from which Akron has derived its supply for the past 38 years. It has a net silt-contributing area of 124 square miles with a reservoir containing 7,423 acre feet. From 1914, when the reservoir was first

Part of the Hereford cattle herd that grazes on the watershed land; there were more than 200 head in this area at the time the photograph was taken.

These Scotch- and white-pine trees are nearly a quarter of a century old.

These sheep are some of the 1,000 that graze on the Cuyahoga River watershed lands. They "make good lawn mowers," according to Engineer LaDue.

Means to Municipal Water Supply

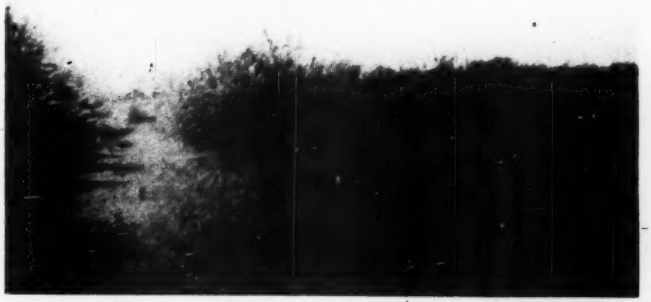
tilled, to 1950, the reservoir has suffered a cumulative loss of original capacity of 7.25%, or 0.20% per year. This means a complete loss in 500 years.

Through silting, the loss of storage capacity in 36 years has been 539 acre feet, or 13.13 acre feet annually at the present rate. This corresponds to 7.20 cubic feet per acre per year. Akron's watershed activities have contributed to this low rate of loss, as evidenced by scientific farming, cattle raising, controlled leasing of some 8,000 acres of land, the planting of approximately 3,000,000 trees, controlled lumbering and forestry utilization, orchards, grass lands, and maple bush culture. Most important has been our example, followed by others in the area. Crop rotation, strip farming, and the building of farm ponds also have helped.

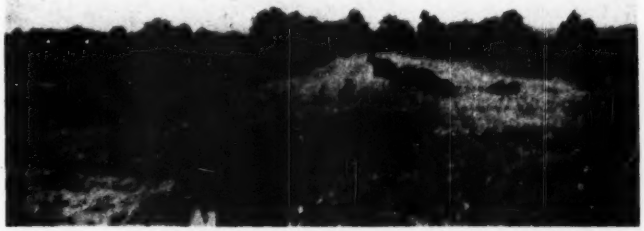
Watershed Managers

Those in charge of watershed management cannot be specialists. They must be at one time meteorologists, chemists, bacteriologists, biologists, foresters, patrons of animal husbandry, agriculturists, agrarians, orchardists, geologists, sanitarians, and hydrologists. Somewhere along the line they become "dyed-in-the-wool" conservationists.

The watershed manager deals with continually changing factors, subject to the vagaries of both man and nature. Each watershed has a personality of its own to be studied, surveyed, watched, directed, and controlled. As with people, "no two are alike."

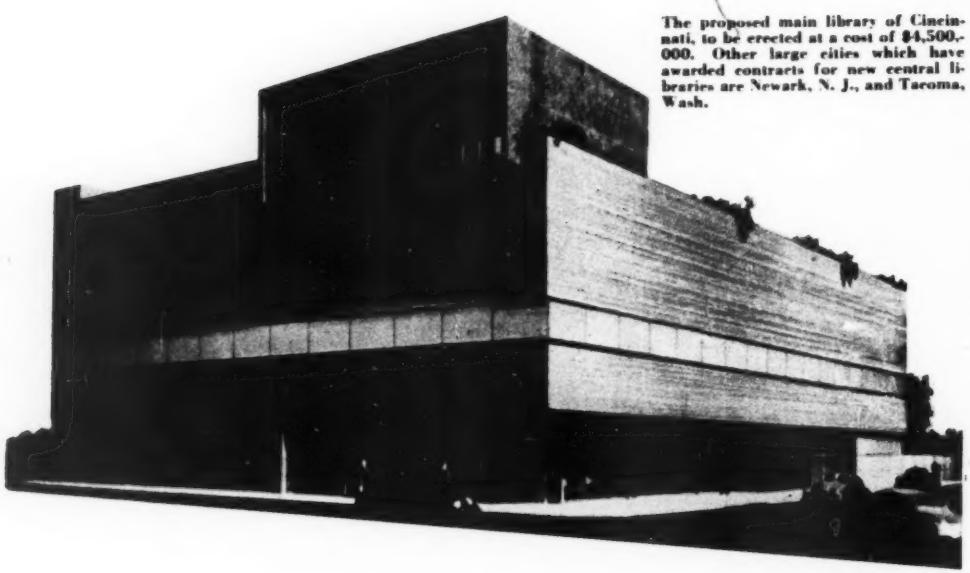


Land not suitable for farming is planted as orchard, and more than 35,000 bushels of apples, as well as cherries and other fruits, are the dividend.



This is a meadow of one of the farms that are located on watershed lands; about 18,000 bales of hay constitute the average from this farm alone.

The job of this crew is, ordinarily, to lay pipe. Here they plant nursery stock on the reservoir watershed. Chief Engineer LaDue has found that the men work quickly and are able to plant with surprisingly little loss of the stock.



The proposed main library of Cincinnati, to be erected at a cost of $4,500,000. Other large cities which have awarded contracts for new central libraries are Newark, N. J., and Tacoma, Wash.

Trends in Public Libraries Today

By JOHN EMMETT BURKE
Librarian
George Peabody College for Teachers
Nashville, Tenn.

TODAY there are 7,408 public libraries in the United States. The American Library Association estimates that since 1945 more than $100,000,000 has been spent on the construction and remodeling of libraries. Public libraries in American cities today enjoy a prestige and support seldom challenged.

But, as in other phases of city administration, the construction costs of these new public libraries have spiraled. For instance, among the large public libraries which have announced plans for construction is the Cincinnati Public Library. The estimated cost of the proposed building is $4,500,000, compared to the actual cost of $2,000,000 for the Enoch Pratt Free Library (really the public library of Baltimore), built in 1932, and $2,026,243 for the Toledo Public Library built in 1940. Yet both the Enoch Pratt and the Toledo buildings have floor space comparable in number of square feet to the public library proposed for Cincinnati.

Old Libraries Modernized

Some large cities have found building costs so prohibitive that they have settled for the renovation of the main library structure, even though they recognize the public library as the hub of civic activities and educational progress. When, in 1946, the people of Atlanta, Ga., voted $1,700,000 to the Atlanta Public Library for the construction of new branch buildings and of a main library, it was found, because of financial limitations, that it would be best to retain and modernize the old building by adding an extension which, though modern, would conform architecturally with the old building.

The recently opened extension expands the square-foot area from 35,000 to 75,000. Outstanding features include electric-eye doors, adequate lighting that reaches 45-foot-candles at table top, air-conditioning, and subdued chamber music in the circulation hall, this last a three-month experiment.

WE ARE PAST the day when a public library served merely as an insignificant corner in the community where a few leisurely citizens, having nothing better to do, could check out a book to read during lonesome hours. The modern public library is one of the most significant centers of community life—an educational and cultural center, a handmaid to business, and a haven for recreational pursuits. It is a growing institution. It is significant that, in spite of the increasing costs of building construction in recent years, and the restrictions imposed by the defense effort, the number of proposals for construction of new libraries is not diminishing. Obviously, the American people recognize the importance of adequate public-library service, and it is reasonable to predict that there will be an ever-increasing demand for expanded public-library facilities within the next decade.

J. E. B.

Building Costs

For the libraries of smaller towns, the rise in building costs has been similar to that for the larger public libraries. It is estimated that the new Hutchinson (Kans.) Public Library, which has 21,780 square feet of floor space, cost $360,000, whereas in 1939 Mason City, Iowa, built and equipped a public library of 30,000 square feet at a cost of $308,000. The estimated cost of the new building in Hempstead, N. Y., which occupies about 16,000 square feet, is $350,000, while the Concord, N. H., Library of comparable size was constructed in 1940 at a cost of $250,000.

Some small cities are fortunate in getting outside help. For example,

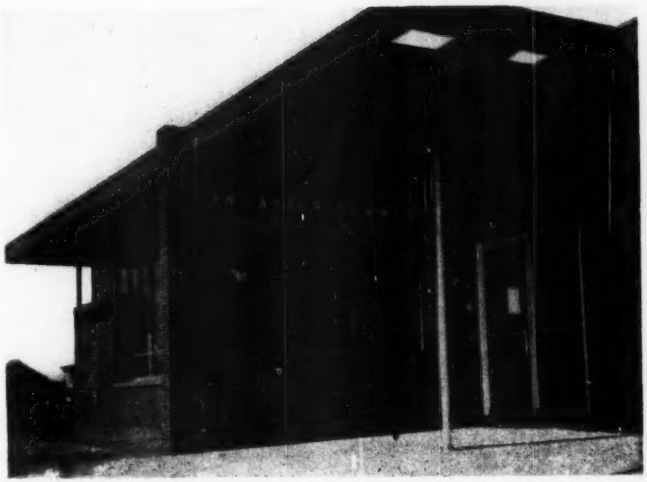
Randolph, N. Y., opened a $50,000 building in 1949 which had an endowment of $30,000 to house a book collection of 11,000 volumes. The municipality appropriates $1,000 yearly for its upkeep while New York grants another $100 annually under a local library-aid program.

Offer Many Advantages

Even though costs have risen, the modern public library offers many advantages to the city. No longer does the library user have to climb long flights of stairs in order to enter a monumental building which has an interior of drab stone and dark, unattractive woodwork. In the new, modern building, the people enter near the street level, facing a series of attractively painted and furnished rooms. Most modern public library buildings are larger, too, and more luxuriously furnished than older libraries, with books and materials to meet a wide variety of interests. There is usually a larger, better qualified staff—a staff specially trained in techniques for helping library users make the most of the library's resources.

A recent survey of cities with populations of 25,000 and over gives evidence that the extent to which the public library is used, as indicated by per capita circulation of books and percentage of people holding registration cards, decreases as the size of the city increases. And there is no conclusive evidence that a smaller library necessarily offers less efficient service than a larger one, although the method of approach may differ in accordance with the specific problems of the locality.

The small public library has the great advantage of an informal relationship with the community not found in large cities, but it must of necessity rely upon larger libraries for access to seldom-used books. And yet, through its inter-library loan services as well as through the use of its own resources, it becomes a valuable educational asset to the community.



In the past two years, the Los Angeles County Library System has constructed five branch buildings, all very similar in design and construction to the Lancaster Branch depicted above. This building was erected at a cost of $48,000 and serves approximately 3,000 readers, of whom one-third are children. The branches are all of wood-frame construction and are built on a concrete slab with asphalt tile covering. Ramps, not steps, lead to the front door.

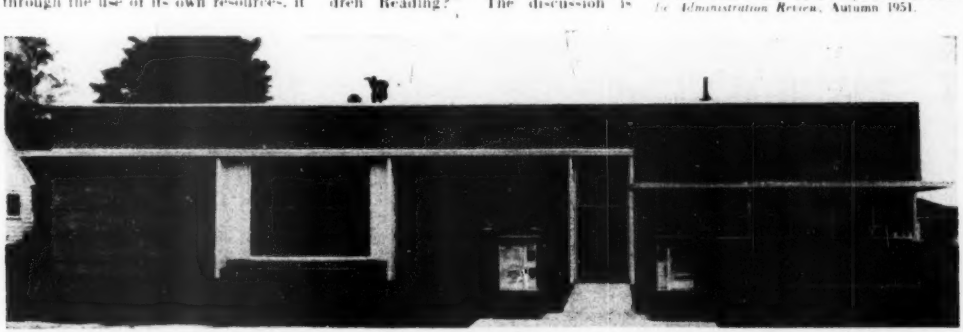
A few examples of library usage within a community may serve to illustrate best practice in public-library service today.

A librarian stands before a labor-union meeting in a metropolitan center. Piles of books and pamphlets are on the table beside him. He describes materials on labor history, on group leadership, on economic theory. When the meeting is over, a few dozen men leave with items that have caught their interest.

In a somewhat smaller city a librarian begins the second of a series of talks before a suburban parent-teacher group. The topic is "What Are Children Reading?" The discussion is quick and serious. Books are opened, passed around, and evaluated. Everybody goes home with the feeling that he has become better informed on the importance of public-library service in his personal life and in the life of the community.

In a very small town, thirty neighbors gather round a large table in the meeting room of the public library. In their midst are a few library copies of books they have all read. Under the librarian's direction, a lively discussion begins, and there is an opportunity for the participation of practically everyone present.

EDITOR'S NOTE: For information about the New York State program of state aid for library services, see "Equalizing Library Services in New York State," by Phillips Bradley, *Public Administration Review*, Autumn 1951.



Branch libraries bring books and magazines to the residential districts, obviating long trips downtown. Pictured above is the Grace R. Moore Branch of the Tacoma (Wash.) Public Library. Erected in 1950 at a cost of $71,000, this branch library provides, in addition to books and other reading materials, a meeting room for community use.

How to Make Refuse Collection SANITARY

Storage and collection of municipal food wastes, at present the weak link in municipal fly-control work, can be controlled by simple, easy-to-follow methods

There is no reason why refuse storage should be unsightly or unhealthful.

The grill shown here is used to determine an index of fly density at the various locations which attract flies.

This photograph shows fly larvae, or maggots, developing in the "sludge" left in the bottom of a garbage can.

By
J. H. COFFEY, *Sanitary Engineer*
and
W. L. DUNN, *J. A. Sanitary Engineer*
Public Health Service, Federal Security Agency, Atlanta, Ga.

UNTIL the last few years, little attention has been given to refuse handling, particularly the planned and economical sanitary storage, collection, and disposal of food wastes, commonly called garbage. These wastes provide food for flies, cockroaches, and domestic rats, and often create disagreeable odors and nuisances. If refuse is left accessible to insects, rodents, birds, dogs, and other animals, there is a constant danger of pathogenic organisms being transmitted to humans.

In Hidalgo County, Texas, we found that a reduction of the fly density lowered the number of cases of diarrheal diseases. Flies may also transmit typhoid fever, cholera, yaws, and possibly many other diseases. The fly's body surface, especially the hairs on its feet and legs, is ideal for picking up and carrying filth. Certain species of blowfly have been found to carry over 3,500,000 bacteria per specimen, with 8 to 10 times as many bacteria found inside as on the surface of the fly. Flies are annoying to animals as well as to humans, and are responsible for yearly economic losses of several million dollars to the livestock and dairy industries.

Rodent Danger

Exposed rubbish also provides harborage for rats which encourages them to live and reproduce where food, especially garbage, is available. Domestic rats, with their fleas and other ectoparasites, may transmit plague, murine typhus fever, salmonellosis, Weil's disease, and rat-bite fever. In addition, the cost to the public is estimated at $250,000,000 per year just to feed rats in the United States; and fowls, grain, and other valuable food and merchandise they destroy may amount to 10 times this figure. This estimated economic loss ranges from $1.60 to $16.00 per person per year.

Insect- and rodent-control projects sponsored by federal, state and local health departments are now emphasizing this neglected municipal responsibility—sanitary refuse handling. Many communities have found that planned, sanitary handling of refuse costs little more than the customary insanitary handling.

Although this discussion stresses fly control, the points considered are applicable to rat control as well. The importance of refuse handling in both insect and rodent control is expressed in two well-known Public Health Service manuals: "The Control of Domestic Flies" and "Rat-borne Disease Prevention and Control."

From the public-health viewpoint the proper storage of refuse, particularly garbage, at the doors of homes, restaurants, and markets is the most important part of refuse handling. Proper storage of refuse cannot be accomplished, however, unless adequate collection service is provided. Refuse storage is the responsibility of the householder and business establishment, and can be accomplished only through education convincing all citizens that flies, rats, and disagreeable odors at their doorsteps are unhealthful and undesirable.

Uncovered garbage cans and garbage scattered on the ground attract flies and provide excellent breeding media. Such exposed garbage also provides the necessary food for large rat populations. Providing a simple elevated stand (which will not harbor rats) for refuse containers keeps dogs from tipping

them over and keeps the cans dry, preventing corrosion. Draining and wrapping garbage in several thicknesses of paper before placing it in the cans greatly reduces fly breeding, prolongs the life of containers, makes them easier to keep clean, and reduces unpleasant odors. The wrapping of garbage is being stressed on all fly-control projects.

The educational or information-sanitation program carried on at the Topeka (Kans.) fly-control project improved garbage-storage conditions from about 30% adequate to 90% adequate. Ten thousand unsatisfactory containers were "red-tagged" during a one-week campaign; and, as a result 7,500 to 8,000 new containers were sold by local merchants during this one week.

Refuse Collection

As previously stated, proper storage of refuse cannot be accomplished unless adequate collection service is provided.

The minimum time required for flies to develop from eggs to larvae should be used as a basis for determining frequency of collection. It is usually recommended that garbage and combined refuse be collected at least twice a week in residential areas. More frequent collections may be required during warm weather. Daily collections are usually made at business establishments due to the large amount of refuse accumulated each day, and such collections, especially in the larger cities, are often more conveniently made at night.

Refuse Disposal

In the past, the "open dump" has served, in an inferior way, as the commonly accepted method of refuse disposal, particularly in many of the smaller cities and towns of the United States. As these cities grew and expanded, the land adjacent to open dumps became more valuable, resulting in a demand for sanitary refuse disposal. Flies, rats, and mosquitoes often migrate from such dumps to adjacent cities. Even when the open dump is located a sufficient distance from populated areas to prevent this migration, the cost of the long haul for collection vehicles may be increased to the extent that sanitary disposal could be provided for about the same cost.

There are several sanitary methods of refuse disposal, such as incineration, central or home garbage grinders, and the *well-operated* sanitary landfill. If a community provides satisfactory disposal, it generally has given attention to all phases of refuse handling and storage, and collections are usually carried out in a sanitary and economical manner.

Since World War II, and prior to that time in England, many cities and towns in the United States have used the sanitary-landfill method of refuse disposal. It is not always the best method, but under certain conditions it has proved to be the answer to safe, economical refuse disposal, particularly in cities and towns with less than 100,000 people.

Probably no two sanitary landfills are operated exactly alike, but the three principles involved in ideal operation require that (1) Refuse be well compacted; (2) Each cell not exceed 6 or 8 feet in depth, and (3) The entire fill be sealed with proper cover frequently enough to eliminate insects, rodents, and odors.

Regardless of the type of earth-moving equipment used at the sanitary landfill, it must be operated and maintained by competent personnel. Its main shortcoming is that improper operation may revert the site to a "covered dump" resulting in untidiness, erosion of cover, surface cracking, and only limited insect and rodent control.

Conclusions

It is suggested that the direct responsibility for refuse handling be given to the public-works department if the health department is allowed actively to assist, advise, and assume its responsibility for this public service.

The direct cost to each householder for refuse containers and a stand at his residence should not be more than $1 to $2 per year.

Although a good sanitary refuse-handling program should be accomplished largely through education and cooperation of the public, it should be backed by a good refuse ordinance or sanitary code.

Cooperation in the city or community is a matter of public education, and the extent of this cooperation will determine the success or failure of a good refuse program. A well-organized, informative, and educational sanitation program, stating the economic advantages and the health aims and benefits, will provide this necessary cooperation. This cannot be accomplished with a one-week campaign, but must be a continuing day-to-day activity.

Several media are now available or are being prepared to assist local communities with their education-sanitation activities. These include:

1. A manual, "The Control of Domestic Flies," by J. H. Coffey and H. F. Schoof.
2. An environmental-sanitary-survey form to be used in obtaining information on the basic sanitary factors for a given area.
3. An educational or informational sanitation-operations outline for a typical city or town with a June-to-September fly-breeding season.
4. A series of about 14 sample pamphlets covering refuse handling and fly biology.
5. A set of 14 suggested press releases on fly control and sanitation.
6. A list of available films on environmental sanitation and fly control.

This material should provide interested cities and communities with a sound basis for future fly-control programs.

How Small Towns Can Deal with New Large Industries

THE "Impact of Large Industries Upon Small Communities" is discussed in a 39-page Planning Advisory Service Information Report published by the American Society of Planning Officials.* The report deals with the many and varied problems of adjustment and the planning required when a large industrial expansion takes place in a small community. Drawing upon the experience of a number of towns during the last war and in the present defense period, and upon theoretical knowledge, the bulletin describes the sequence of events which may be expected in such a community, and sets forth a suggested program of planning activity. A bibliography is included at the end of the report. This is Information Report No. 31 in the special series of Information Reports prepared by the Society for subscribers to Planning Advisory Service.

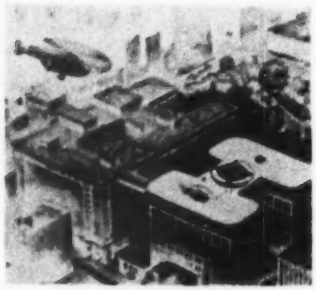
* Planning Advisory Service Information Reports are available only to subscribers to the Service. For further information, write to the American Society of Planning Officials, 1313 East 60th St., Chicago 37, Ill.

Minneapolis Increases Fire Service Charges to Near-by Municipalities

THE International City Managers' Association reports that under a new scale of service charges set by the city, the fixed charge for fire services to neighboring cities is now $10 per $10,000 of assessed valuation with a minimum annual charge of $300. The fixed charge on individual and private concerns was left at $5 per $10,000 of assessed valuation, but the minimum charge per year on individuals was upped from $25 to $50, while that on businesses was increased from $75 to $150.

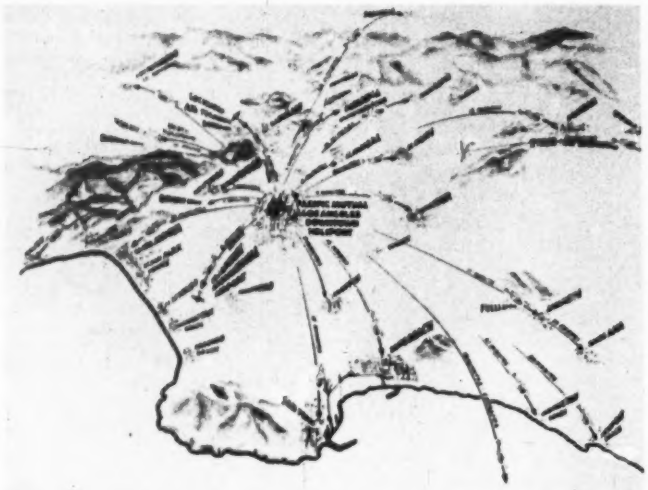
In addition to the fixed charges, Minneapolis collects a service charge for outside calls based on hourly rates for men and equipment. The new hourly charges for men range from $1.75 for firemen to $4 for the chief engineer—approximately 1/3 to 1/5 higher than old rates. Hourly charges for ladder trucks and hose wagons are $125 and for pumpers and rescue squads $150 per hour or fraction of an hour.

Municipal Planning for Helicopters



The architect's sketch of the new Los Angeles Downtown Heliport, to be constructed atop the Pacific Mutual Life Insurance Company home building.

By C. M. BELINN, *President*
Los Angeles Airways, Inc.



This area map of Greater Los Angeles indicates the calculated helicopter flight time from the Pacific Mutual Downtown Heliport to outlying communities.

THE past year undoubtedly has been the most important period in the long history of direct-lift flight. This history began with experiments conducted by Leonardo da Vinci 1483 and became significant when, in October 1947, Los Angeles Airways began actual operation of the world's first scheduled helicopter transport service.

The value of the helicopter in rescue work, disaster relief, and civil-defense operations has been clearly established by the increasingly varied and numerous missions assigned to it by the United Nations forces in Korea, and by its municipal use in cities like New York.* Medical, demolition, and repair units and supplies can be landed on unprepared surfaces in confined, stricken areas or on small vessels at sea. The helicopter's ability to ascend and descend vertically or hover in the air makes it possible to hoist evacuees to safety. With the new larger helicopter models becoming available, its use as a troop- and cargo-carrying transport is becoming more widespread.

Certainly, the peacetime implications and potentialities of helicopter transportation now deserve careful attention and planning if the maximum benefits from it are to be derived.

After a careful study of rotary-wing aircraft developments, the President's Air Coordinating Committee recently released a long list of recommendations —the most important of which directs the Civil Aeronautics Board and the Post Office Department to give real and long-range support to the helicopter program so that an efficient national helicopter transport facility will be assured.

Our own company, for example, which in 1947 began operation of the world's first scheduled helicopter transport service, was awarded in 1951 an extension to its operating certificate, authorizing the transportation of passengers as well as mail and cargo. Early in 1952 we will receive at Bridgeport, Conn., the first combination passenger, mail, and cargo helicopter. This machine compares with the present ships we operate in about the same way the early Ford Tri-motor plane compared with the early single-engine mail plane, and it is the forerunner of what we hope to be a long and successful lineage of direct-lift work horses.

With the increasing speed and utilization of the nation's airline systems, requiring larger and more complex airports, many of these facilities are being located farther and farther away from the centers of population because of land costs and other factors. So, in spite of the time the typical passenger may save by air travel, he is now often inconvenienced by the surface journey in getting to and from the airport itself. There is no question but that helicopter service will help solve this problem and meet a real need in many cities. There is little doubt also that helicopter airport service will permit further air-travel penetration of the short-haul travel market, largely served at present by railroad, bus, and private auto.

Pattern Established

Naturally, the vast, sprawling character of development of the Los Angeles metropolitan area made it a particularly good laboratory for helicopter-travel experimentation. The pattern established there may, however, be used as a basis for developing similar patterns in other parts of the country.

A major heliport is being constructed at the Los Angeles County's Palmdale Airport, directly in front of the new Administration Building. Regular helicopter service exists already to the International Airport, and a permanent

* See "What a Helicopter Can Do for a Police Department" on page 123.

heliport structure has been completed on top of the Post Office Annex Building in downtown Los Angeles. Perhaps more important, on top of one of the principal downtown Los Angeles buildings, the Pacific Mutual Life Insurance Building, a plan has been consumated for the construction of a privately financed heliport on the rooftop, including a top-story passenger lounge reached by express elevator and connecting directly with the helicopter landing area by escalators.

Raymond V. Darby, Los Angeles County Supervisor, has reported that the present system of airports in the Los Angeles County area and the Master Plan of Heliports, now being prepared by the Los Angeles County Department of Aviation, will implement the use of helicopters so that an air passenger can be delivered to an address within a block of his place of residence.

Municipal Heliports

The two primary areas needing immediate attention in every community are the setting aside of both ground and air space for a municipal heliport.

This heliport should be dedicated to the use of the citizens of the community, and should not be regarded as self-supporting, but should be considered in the same light as a street corner where streetcars, buses, and taxicabs pick up and deposit passengers.

Why should a city provide a private corporation with the facility from which to operate? First of all, helicopters are capable of utilizing so-called non-revenue-producing property; in other words, since the machines do not need acres and acres of taxable land or land useful for other purposes, every city or municipality can therefore make available to its own taxpayers on any piece of vacant property a first-class heliport. Secondly, even if the property or facility is not useful from a revenue-producing point of view, there is a public responsibility to provide public travel facilities to everyone. Sooner or later every citizen gets some service from it —either from the mail, cargo, passenger, or sightseeing functions.

The helicopters of our company operate from almost every conceivable sort of landing site—some are located on public dumps, schoolyards, brickyards, parks, municipal maintenance-yards, parking lots, and rooftops.

For helicopter-travel purposes there should be a plot of ground in the immediate outskirts of each city adjacent to one or more principal arteries of highway travel. Preferably the location should not be more than five minutes from the center of town, particularly from its post office and civic center. The physical details of such a site can vary, the principal requirement being that it not be surrounded by high-tension lines, trees, buildings, or other obstructions involving a hazard to navigation. Ordinarily, a plot 200 feet square is regarded as having enough space. By all means, it should be located in a commercially zoned area because the use of larger machines in the future, with greatly expanded around-the-clock schedules, might create a potential nuisance.

In addition to providing for the actual touchdown site, it is equally important to consider the problems of providing navigable air space to and from the areas.

One clincher in rounding out a well-defined metropolitan airway system would be for the Federal Government to include the helicopter set-up in its National Air Navigation pattern.

There are still technical problems to be solved; on some, great progress has been made. Our company recognizes, for example, that unless helicopter operations can maintain the same regularity under all conditions of weather, day or night, that an airline maintains, there will be some bitter disappointments. To this end, there has been carried out to successful conclusion a most comprehensive instrument flight-test program that also aided in providing us with a safety record that has been excellent. During 1950 alone, our company's aircraft flew 364,256 miles and carried 4,424,052 pounds of mail without incident. In three years, some 20,000 landings and take-offs were made from the Post Office roof.

The Los Angeles Airways thus far has independently developed its own heliports, mostly on fenced-in vacant lots, at an average cost of $250 each. After some experimentation, the night-lighting problem was economically solved by gluing small pieces of highly reflective material to pieces of masonite and wiring these to both sides of each fence post. The landing lights of the S-51 helicopters have been adjusted so that one acts as a floodlight to pick out the reflectors and outline the heliport perimeter, while the other spotlights the touchdown area. Thus far, high-intensity railroad signal flares have been used as beacons to locate the heliports readily from the air.

The helicopter has prospects of furnishing not only cheap, reliable, and safe transportation, but it also is inherently capable of opening up and developing new relationships between communities and making accessible, for many purposes, portions of the country which have been relatively untouched. It deserves municipal support and interest.

No Republican Sewer Pipe Or Democratic Fire Engine

IN THE long run and on the state and national levels, no satisfactory substitute for the party system has been found. . . . On the local level, however, the situation is very different: the issues of local politics have nothing to do with national politics."

Expressing this conclusion at the National Conference on Government, in Cincinnati on November 27, Thomas H. Reed, veteran municipal consultant, pointed out that "there is no such thing as a Republican sewer pipe or Democratic fire engine."

"In my opinion," continued the speaker, "the great parties make a serious mistake in injecting themselves into local campaigns. They make enemies and suffer losses of prestige far out of proportion to the value of any small patronage they may pick up. . . . The Republican party in Pennsylvania would at this moment be in a much better position for the 1952 election if it had not made a partisan issue of the Philadelphia mayoralty."

The luncheon session at which Dr. Reed spoke was sponsored jointly by the National Municipal League and the Cincinnati Junior Chamber of Commerce. Addressing his remarks especially to this junior group, Dr. Reed quoted Mazzini's definition of democracy—"Government of all by all under the leadership of the best and the wisest"—and added:

> The duty of sound leadership rests most heavily on you young men of the Junior Chamber. You and your kids must see the fight through. I don't hold out any hopes of personal reward. It will require the sacrifice of time, strength and money, and endless courage, to put politics to rights throughout this land. The dividends will come in two forms. First, there will be an America which lives up to its promises and professions—the best background for happy living that can be conceived. Second, there will be the satisfaction which comes from answering the call of duty. Many of you have answered it on the battlefield. You will not shirk from answering it in the arena of politics.

Editorial Note—Dr. Reed's conference paper from which the foregoing excerpts are quoted is being published in the *National Municipal Review* for January 1952.

DECATUR, ALA.

Water Works *Quadruples* Its Capacity

The desire of industrial and domestic users for plenty of water with favorable characteristics brought about swift completion of a long-range program

By GEORGE H. GODWIN
Water Works General Manager
Decatur, Ala.

WITH A 4-mgd increase in treatment-plant capacity, and improvements to the distribution system, our water system is able to deliver four times its 1939 capacity.

Few would challenge the statement that nothing succeeds like success. Decatur's success in supplying its people with good water that industries also can use to advantage has succeeded in keeping the water department busy for the past 12 years, scrapping long-range plans and building capacity into its system that it normally wouldn't have to use for another dozen years.

Today the treatment plant can push through a solid 8,000,000 gallons daily, with every drop treated to meet the strictest of health standards. Today it keeps 3.3 mg set aside in elevated storage tanks with respective capacities of 300,000, 1,000,000, and 2,000,000 gallons. In 1939, however, the city's plant worked hard to furnish only 2 mgd and its elevated-storage capacity was only 500,000 gallons.

The long-range Tennessee Valley Authority program brought about the first step in growth. When Wheeler Lake was created, it inundated the old plant site. Since TVA's low-cost electric power made obsolete the use of steam-driven pumps, the city set about building a new plant, powered by electricity, which we thought would serve adequately for at least another 20 years. The new plant had a 4-mg capacity.

When making this estimate, we scored only 50% by our efforts, because by 1949 instead of 1959, the growth of the city, plus the influx of new industries, had staggered the capacity of the existing facilities. One company alone announced its willingness to locate near by provided 1.5 mgd could be assured it.

In January 1949, the Municipal Water Board reset its sights, this time on an 8-mgd plant. To strengthen its system further, it laid plans for a 2-mg elevated storage tank and installed 63,000 feet of cast-iron transmission and distribution mains ranging in size from 6 to 24 inches. A new 8-inch Molox ball-and-socket pipeline was installed across the Tennessee River to serve the trade school and industrial areas on the north bank of the Tennessee River.

The improvements started at the river intakes. There are two of these, one located 130 feet from the shore, the other constructed on the shore and making use of a 30-inch cast-iron intake, which was installed in 1888 and extended into the old river channel for a distance of approximately 820 feet. The former is referred to as Raw Water Station No. 1, and the latter as Raw Water Station No. 2. The off-shore intake gets the bulk of the use, except during certain periods in the summer when the algae complicate the treatment. At those times the shoreline station is pressed into service, and by taking water from the bottom of the Tennessee River, it helps tremendously with the taste-and-odor problem.

The existing intakes themselves were satisfactory, but they needed new pumps and they needed a new 24-inch cast-iron transmission main to take the increasing flow to the treatment plant.

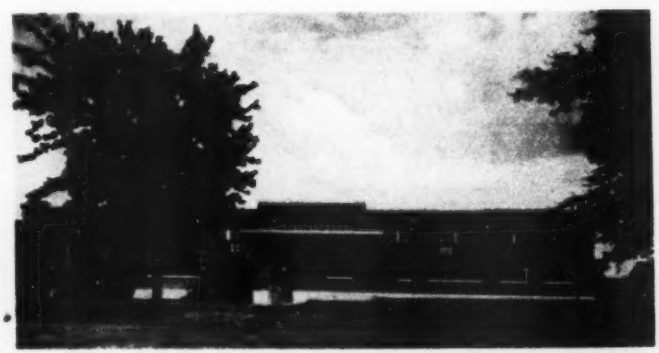
Water Station No. 1

Raw Water Station No. 1 is equipped with four Layne vertical turbine-type deep-well pumps, each having a total capacity of 2,800 gpm at a total head of 50 feet. Each of these pumps operates at 1,150 rpm and is driven by a direct-connected 40-hp Westinghouse motor.

Raw Water Station No. 2 is equipped with one Layne vertical turbine-type deep-well pump with a capacity of 5,600 gpm at a total head of 57 feet. This pump operates at 1,150 rpm, and, is direct-connected to a 100-hp Westinghouse motor. All raw-water pumps are operated by remote control from the new chemical building.

A new 24-inch cast-iron raw water main was installed from the intakes to the treatment plant.

The treatment plant is of the conventional type for surface supplies, consisting of chemical-feed equipment, rapid mixing, flocculation, settling, filtering, pre-chlorination, and post-chlorination. Originally, the plant did not have mechanical mixing facilities, and housing facilities for pre-chlorination and chemical-feed equipment were inadequate for the enlarged plant. The existing chemical-feed house was converted to house chlorine-storage and pre-chlorination equipment. A new chemical-feed house was built, with lime and alum storage on the first floor. The second floor contains Wallace & Tiernan dry-feed machines for feeding lime and alum, a Wallace & Tiernan amperometric residual chlorine recorder, an electric control-panel for raw-water pumps, conveyors, rapid-mix equipment, flocculators, and a raw-water meter. Conveyors were installed to load chemical machines with lime and alum; these machines discharge through an open trough into a concrete distribution box. The water flows from



This photograph shows the attractive exterior of the filter plant and pumping station, which was one answer to Decatur's need for quadrupling its water supply.

Above, the plant's filter-pipe gallery, at ground level instead of underground. The photo at right shows how the design of pumps has changed in recent years. The two older pumps are centrifugal and the four new units are vertical turbine-type pumps. All of the units perform the same task, that of pumping the filtered water.

the concrete distribution box into one of the rapid-mix units. Each unit has a capacity of 8 mgd, and each discharges into a common flume which connects with two mechanical flocculator units. Each flocculator unit has a capacity of 8 mgd. The flocculator discharges into a common flume, which connects with a new concrete settling basin and with two old concrete settling basins. The filter and pumping station building in general follows the design of the older, smaller structure.

The plant had four filters, each rated at 1 mgd. To these were added four new filters of the same capacity. Each filter is equipped with a Palmer filter-bed agitator. All valves are hydraulically operated from control tables in the operating gallery above the pipe gallery. Each control table is equipped with a rate-of-flow and loss-of-head gauge. The hydraulic valves were furnished by the M & H Valve and Fittings Company; the control tables and pipes by the International Filter Company. Contrary to most plants, the filter-pipe gallery is located on the first floor and is in plain sight of every visitor. So, for the sake of uniformity, the pipe layout for the new filters conformed to that of the old. The only major difference has been that of using Wheeler under-drains, whereas the old filters had the conventional manifolds and laterals.

The existing clear well had sufficient capacity and was continued in use. The effluent header from the new filters was connected to the effluent header of the existing filters, just before entering the clear well.

Turbine Pumps Save Space

The existing service or high-lift pumps were inadequate after the plant was installed. In order to obtain an economical installation, from a floor-space standpoint, vertical turbine-type pumps were installed. Two of the existing pumps were maintained for use. Four new Layne vertical turbine-type deep-well pumps were installed, each having a capacity of 4 mgd at a total head of 232 feet. Each of these pumps operates at 1,750 rpm and is driven by a Westinghouse 200-hp direct-connected motor. All service pumps are equipped with hydraulically operated valves.

All pipe and fittings on the project were furnished by the American Cast Iron Pipe Company. All valves and tapping sleeves were furnished by the M & H Valve and Fittings Company; conveyors by Link-Belt Company; rapid mixers and flocculators by the Walker Process Company; pumping equipment by Layne-Central Company; chemical feeders, chlorinators, and chlorine-recording equipment by Wallace & Tiernan Company, and the 2-mg tank by the Chicago Bridge and Iron Company.

After considerable study of the corrosion problem, with both the new and old elevated tanks, it was decided to equip them with cathodic protection, which was installed by the Electro Rust Proofing Corporation.

The general contractor for the treatment plant was the Rust Engineering Company, of Birmingham, Ala., and the general contractor for the distribution and feeder mains was Zeigler Appliance Company, of Greenville, Ala. Engineers for the project were Polglaze and Basenberg, of Birmingham, Ala.

Deep-well turbine-type pumps handle both raw and filtered water. These are in the No. 1 pumping station.

Except for a change in the under drain, filters in the new portion of the plant are similar to those in the old.

The Comision de Fomento Nacional

New authority-type set-up promotes efficiency in Cuban public construction

MUCH-NEEDED public improvements throughout Cuba have received a tremendous "shot in the arm" and are being pushed through with a minimum of waste and a maximum of efficiency under a unique program of the Comision de Fomento Nacional, a new authority-type organization designed to promote increased cooperation and efficiency in Cuban public construction.

Origin of Comision

The Comision was originally established to carry out various public improvements under a $25,000,000 loan from the Export-Import Bank. There are five members and five substitutes on the Comision—all appointed by the President of Cuba, with the approval of the Senate. The Comision has functioned largely through the device of employing a consultant firm to supervise its entire program. The organization chosen—with the approval of the President—was the Frederick Snare Corporation, a well-known contracting firm, experienced in large-scale construction throughout Latin America. Its 50-year-old Havana office, headed by Manuel Gamba, vice-president, is in charge of all the work in Cuba.

Reinforced-concrete distribution tank for the Consolacion del Sur Aqueduct shown in the process of construction.

So satisfactory was the handling by the Comision of the first loan, and so respected is the Frederick Snare Corporation generally, that when the Cuban government requested a loan of $70,000,000 for a new public-works program, Cuban bankers granted it only on the condition that the funds be channeled through the Comision de Fomento, with the Snare Corporation as consultant.

A view of the 42-inch cast-iron pipe for the main of the aqueduct being laid near the wells which will supply water to the City of Marianao.

In the short time the new program has been in operation—since August 1950—there has been great progress in placing projects in the various categories under contract. At the beginning of September 1951, 85% of all projects had been placed under contract, out of the total amount available. A breakdown shows the distribution:

Highways	$31,700,000
Water Supply and Reservoirs	9,900,000
Agricultural Development	2,800,000
Tourist Development	7,300,000
Harbor Facilities and Dredging	900,000
Liquidation of Original Eximbank Loan	10,000,000

Among the major projects included in this breakdown are: the Matanzas to Veradero highway, to be completed by October 1952 at a total cost of $686,269, a development which will greatly increase the accessibility of sparkling Veradero Beach to Havana residents and others.

Following is a list of other major projects:

Guiteras Bridge, Rio Canimar	$1,333,696
Water Supply, City of Marianao	2,686,218
Water Supply, City of Holguin	1,861,963
Dam, Rio Cacoyugnin—for Holguin Water Supply	1,219,469
Highway, Cienfuegos—Trinidad	3,092,507
Highway, Camaguey—Santa Cruz del Sur	2,612,744
Highway, Amarillas—Aguades—Rodas	2,666,234

In addition to the $70,000,000 loan, a

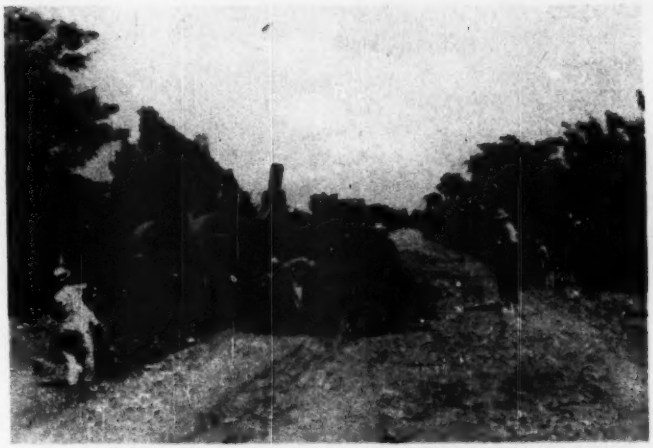
Construction of the road from Sola to Mina, which runs for over 15 miles. This is a photograph of work at an earth-fill stretch.

second one amounting to $24,500,000 has been approved. Of this loan, $5,000,000 has been earmarked for the construction of a modern vehicular tunnel under the Rio Almendares, to connect Havana with the fashionable suburb of Marianao. Preliminary work on this tunnel is now under way.

Other Phases

Because of the highly satisfactory progress and rate of development on the program initiated by the Comision and supervised by the Snare Corporation, it seems likely that the Cuban government will capitalize on this successful formula when considering the construction and completion of other phases of its many public-works requirements.

EDITOR'S NOTE:
See THE AMERICAN CITY, October 1950, page 92, for article on another outstanding Snare Corporation venture, "Guayaquil, Ecuador, Acquires Builder-Management-Engineering Team."



Laborers and motor grader at work on construction and repairs on the road from Artemisa to Guanimar, via La Roncha. It is being built at a cost of $151,570.

A Noisy Office Costs Money and Efficiency

By SAM L. HOOPER
Remington Rand, Inc.
New York, N. Y.

WE LIVE in a world of sound. But it is not all noise, which is unwanted sound. In experiments sponsored by the airlines to find ways of curbing the intense noise of their operations, certain test animals have actually been killed by exposure to noise at decibel readings no higher than the roar of jet motors. Of course, the human animal is tougher, but above 90 decibels serious hearing losses and other ill effects take place.

The decibel is the standard of loudness; 10 decibels represent the noise level of the rustle of leaves in a gentle breeze; in a normal home the noise level runs 40 to 50, and in a modern office about 60. More important than the decibel readings are the measures of sound-energy units, which increase by geometric progression. It is these sound-energy units which affect us. Science has now developed a new measure of sound which involves both volume and pitch. This is called the *sone*.

Noise was on every payroll, to the aggregate amount of $2,000,000 a day, even before the war, according to an engineering study made then. "Noise is in the same class with bad ventilation and poor lighting in its effect on human efficiency," says Professor Maze in his book, *Office Management*.

The Aetna Insurance Company of Hartford, Conn., reported a few years ago that as a result of lowering the noise levels of their offices, typing errors decreased 29% and machine operators' errors, 52%. Employee turnover was reduced by 47%, and efficiency increased 9%. The company concluded that it had effected a net saving of $58 per employee in the first year.

The next time you hear a typewriter in your office, don't think of it as costing $150. If in constant use, it is costing you $2,500 to $3,000 per year, because it is no good to you except as an instrument of production and that means that you must figure an operator's salary at least. Now if lowering the sound levels of your office improves your output 10%, this pays the price of each typewriter in the office yearly.

The National Noise Abatement Council, at 9 Rockefeller Plaza, New York, carries on the battle against noise. The proceedings of their 1951 meeting are available from them upon request.

An educational program is keyed to the annual observance of Noise Abatement Week, and in 1951 some 26 cities participated. Memphis, Tenn., is an example of this participation and what can be done to abate noise. Its program was described by NNAC President George W. Handy in THE AMERICAN CITY for November 1951.

Law Officers Discuss Municipal Trends

COMPREHENSIVE reviews and committee reports on many major phases of municipal activity featured the 16th Annual Conference of the National Institute of Municipal Law Officers, held in New York City November 29 to December 1, and attended by more than 200 local attorneys.

William H. Emerson, Corporation Counsel of Rochester, N. Y., reported in his presidential address on the growth of the organization, which now has 636 member municipalities. In addition to its annual volume based largely on the committee reports presented at its conferences, NIMLO publishes the *Municipal Law Journal*, *Municipal Law Court Decisions*, and *Municipal Legislative Bulletin*. These are valuable tools for the busy city attorney.

Of special interest at the conference was a report by Abraham Frankel, City Attorney of Asbury Park, N. J., whose Mayor and City Council had declined to permit broadcasting of a hearing and had subsequently been involved in litigation. Mr. Frankel said:

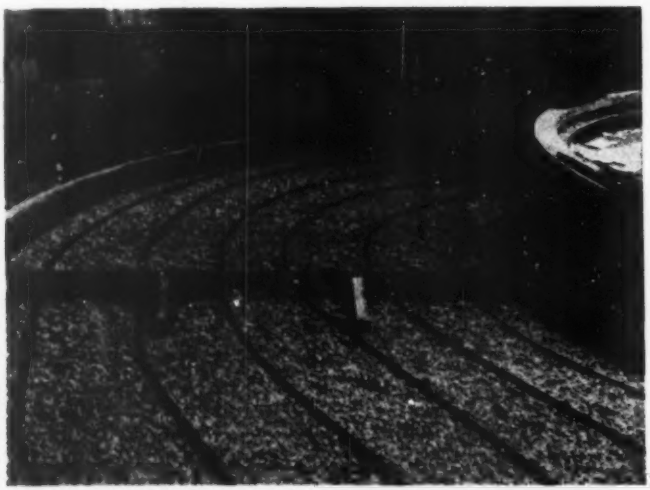
> It is my conclusion that radio and television are the very latest vehicles and media of the press. Their freedom in a democracy must be zealously protected. The impact of radio and television on the public, subject to legitimate restrictions under constitutional government, can serve to strengthen democracy, expose its abuses and stimulate democracy into a truly dynamic force in a threatened world.

Thomas N. Biddison, City Solicitor of Baltimore, was elected president. Charles S. Rhyne continues as general counsel, with headquarters at 730 Jackson Place, NW., Washington, D. C.

"Hidden heat" at the toll-booth approaches of Connecticut's Raymond E. Baldwin Bridge eliminates skidding hazards and keeps traffic moving at peak hours.

Snow Removal by Radiant Heat

The method is finding its place in areas requiring immediate snow removal for safety or convenience — Here are some typical installations



The scene is the ambulance driveway at Pittsburgh's South Side Hospital where wrought-iron pipes have been bent in concentric 90° curves prior to being imbedded. This snow-melting device will keep the driveway open in all weathers.

A LITTLE MORE than a quarter-century ago, in 1925, officials of the Rochester (N. Y.) Gas and Electric Corporation made a daring experiment. They had 1½-inch wrought-iron pipes laid parallel to and some 14 inches below the concrete sidewalks on two sides of their new building. Their purpose: snow-melting.

This was the first recorded installation of subsurface snow-melting coils. Although the Rochester experiment was a success, it was not until the advent and growth of radiant heating, employing similar techniques, that snow-melting began to grow in acceptance.

Many changes in design and installation methods have been made since 1925, but the essential principle is the same: to raise the temperature of a sidewalk or other paved surface to the point where it will melt snow upon contact and prevent ice from forming.

One of the chief advantages of a snow-melting system is its speed of operation. Even light snowfalls can quickly make a key traffic point, such as a bridge approach, a bottleneck that will cripple traffic for miles. Radiant-heat panels can prevent such a situation before it occurs, whereas even the most alert crews take time to assemble and in this time traffic-congestion problems may have become critical.

One example of a concealed snow-melting system applied to a danger spot is at Klamath Falls, Ore., a classic instance well known to highway and safety technicians throughout the country. The system serves a stretch of road four lanes wide and 450 feet long. This area called out for a method of snow removal that would go into action instantaneously, and remain on the job constantly, for the following reasons:

1. The area extends under a railroad viaduct for part of its length, so that a good deal of it is in shadow much of the day. This means that while the sun might melt snow for a considerable distance on either side of the underpass, there would remain an island of snow and ice directly under the viaduct. Motorists who had been driving on clear surfaces would suddenly come onto the frozen "island" at a point where visibility was at a minimum and where supporting structures on either side would make skidding doubly dangerous.
2. The road slopes from either side toward a point directly under the viaduct, so that this already hazardous spot received a heavy drainage load of water which could turn to ice when the temperature dropped again.
3. Straight-ahead visibility, at several points on the approaches, is limited to several hundred feet because of the viaduct structure and the grade.

The Klamath Falls system is unusual

in that the source of heat is drawn from nature. Water circulated through wrought-iron pipes embedded in the road surface is heated by a natural hot spring. This is the only respect, however, in which this installation differs from the typical snow-melting system. In essence, all that is required for such a system, in addition to the pipe which carries the heating fluid, is a device to bring the fluid to the desired operating temperature and a pump to circulate the fluid. In addition to pipes, pump, and boiler or heat exchanger, there is often an automatic control to turn the system on when no one is present to attend to it.

Thermostat Control

Some systems are controlled by a thermostat. One system controlled by this method is in the suburban community of Snake Hill, near Boston, where the pump begins forcing hot water through a system of wrought-iron pipe coils as soon as the temperature drops to 35 degrees.

The Snake Hill project was initiated by members of the community. True to its name, Snake Hill Road is a winding, steep stretch of more than 800 feet, the only way out for the community's residents. Tired of being marooned for days at a time whenever snow fell. Snake Hill citizens banded together to solve the common problem.

One of their number, an architect, drew the plans. It was decided to install two lines of 1-inch pipe for each wheel track. The pipe was welded into three coil sections, one for each of the three steep portions of the road. All three sections were connected with the centrally located boiler house by a supply main and a return main. After the pipe had been laid, it was covered with a 3-inch coat of asphalt. The system was completed in time to serve with distinction in its first winter operation.

Not all snow-melting systems are laid under continuously level surfaces. Safety engineers are becoming increasingly aware of the feasibility of applying "hidden heat" to steps of public buildings. A recent addition to the Anne Arundel County Courthouse, at Annapolis, Md., includes this improvement. Each marble tread of the approach to the main entrance is underlaid with a run of pipe. Two additional runs were placed in the sidewalk below, to take care of any runoff. One advantage seen for this type of snow removal is that it avoids injury to the marble steps that might be caused by use of snow shovels or chemicals.

Most snow-melting systems are installed by private owners. Nevertheless, the number of public systems is constantly growing. Here are a few examples which, like those above, illustrate the practice of "pinpointing" the technique to a specific critical situation:

Garbage and Refuse Incinerator, West Seneca, N. Y.
Here, of course, is one of the vital services of any city that must be kept in operation under all conditions of emergency. Snow-melting makes it possible for employees to arrive and depart by car and for work trucks to get in and out.

United Nations Building, New York City
This most modern building of our time uses the most modern method of snow removal. Coils of wrought-iron pipe are embedded in the circular concrete ramp which leads down into the garage at the main entrance plaza and under the surface of the parking areas in front of the building.

South Side Hospital, Pittsburgh, Pa.
The ambulance drive was designed to curve in a 90-degree arc, sloping downward into a sheltered area at basement level. Concealed snow-melting pipes keep the drive clear and passable in all weather. The need for this type of installation was amply demonstrated in Pittsburgh's "Big Snow" of November 1950, when expectant mothers had to wade through hip-deep snow across hospital grounds, and doctors and interns had to be pressed into snow-shoveling service in their spare time.

Raymond E. Baldwin Bridge, Connecticut
Approaches to the toll booths of this span, which connects Old Lyme and Old Saybrook, are served by subsurface snow-melting coils of wrought-iron pipe. The system was planned to eliminate the hazards of skidding for motorists and toll-station attendants. Provision of a clear surface at the toll booths make it possible for drivers to stop without the fear of being unable to start up again, and keeps traffic moving at peak periods.

How much does it cost to install and operate a snow-melting system? According to a bulletin * recently published by A. M. Byers Company, America's largest wrought-iron manufacturer, installations have been made for as little as 75 cents per square foot of area to be cleared, with one instance recorded where the installation, made by company employees, was reported at 40 cents per square foot. As for operating costs, the most accurate data obtainable—acquired by studying purchases of steam from a central heating system—indicated a cost of 11.5 cents per thousand square feet per inch of snow melted.

What are the advantages of a snow-melting system over other, more conventional methods of snow removal? Briefly summarized, they are as follows:

1. It is the only system of snow removal that can be operated without the presence of a crew of workmen.
2. Removal is constant and continuous. Properly designed, the system melts snow as it falls, so that runoff is handled without undue strain on the city's sewerage system.
3. It is comparatively inexpensive to install and operate. Especially where a new surface is being laid, or an old one replaced, the cost of putting in a snow-melting system is minimal, and operating costs are so low that many owners report the systems are paying for themselves after the first or second winter of operation.

* *Byers Wrought Iron Pipe for Snow Melting Systems*, available upon request to A. M. Byers Co., Clark Bldg., Pittsburgh 22, Pa.

Modern design extends to the grounds surrounding the United Nations Secretariat Building as well as to the building itself. A snow-melting system is shown being installed for the circular concrete ramp that leads to the garage below the main entrance plaza. A similar system serves parking areas in front of building.

Storm Sewer Tunnel Preferred

By J. A. WILLMAN, *City Manager*
Columbus, Ga.

Excavated dirt was delivered to the surface by small elevators and then discharged to waiting trucks. The elevator pits were converted into manholes.

Columbus, Ga., chose to build a storm sewer by tunneling rather than by open cut to avoid disturbance to the business district

NO ONE in our city seemed to doubt that we needed a new storm sewer badly. Columbus has been experiencing a substantial increase in population and industrial activity; this has increased our business district and aggravated an annoying storm-drainage problem. The solution that we proposed was the construction of a new 2,600-foot interceptor sewer, completed last summer. The line varies in diameter from 42 to 60 inches. It passes under the main business district and discharges into the Chattahoochee River.

The problem of design, of course, had its difficulties, but the method of construction was even more difficult, and directly affected the people that the sewer was to serve. Obviously, when the sewer was to be built, the street would have to be torn up and the people in the area inconvenienced. So, acting on the theory that the public will support you if it knows what to expect, we made a distinct effort to present the problem and let the public know how we hoped to handle it.

Obviously we could install the sewer by either of two methods: we could use the open-cut system throughout, or we could tunnel for that portion passing under the business district. Discounting cost, the tunneling naturally would be better because it would eliminate traffic problems, avoid cutting other utilities, and generally be less of a nuisance. The businessmen in town also greatly favored the tunnel, because it avoided disruption of their businesses. Nevertheless, we asked for bids on both methods.

The low bid was contingent on the use of the open-cut method. A second bid, submitted by another firm, that included tunneling through the con-

Liner plates were securely bolted in place before excavation continued. Each plate was 18 inches in diameter.

This is how the lined tunnel looked. Mesh reinforcing was next applied, and after that a layer of gunite.

gested business district at depths of 20 to 25 feet and open-cutting at the two ends, ran about $16,000 higher. Actually the difference was not this great because with the open-cut, the city would have had to replace the damaged pavement. This made the open-cut method only about 5% lower in cost.

But before deciding on the 5% difference, we decided to acquaint property owners, merchants, and others along the route of the sewer with all the facts, and held a meeting to discuss them. The result of the meeting disclosed that both property owners and merchants strongly favored accepting the tunneling bid. With this in mind, the city entered into a contract with T. H. Pearce and Company, of Columbus, to build the sewer. Armco Drainage and Metal Products, Inc., were subcontractors, furnishing and installing 935 feet of 64-inch and 416 feet of 58-inch Armco liner plates. The Pressure Concrete Company, of Florence, Ala., held the subcontract to install steel reinforcing-mesh welded to the inside of the ribs of the tunnel plate, and to apply Gunite to an average thickness of 3½ inches inside the liner plate.

How the Work Proceeded

The first step in the construction was that of digging the manholes in the street intersections. These pits, together with whatever equipment was required to close the opening, were the only obstructions to the normal flow of traffic.

From these pits, the Armco crews tunneled both ways to meet midway in the block. The danger of cave-ins was minimized by the crews' practice of excavating ahead only far enough to add one 18-inch liner plate at a time. Each ring was bolted securely before excavation proceeded. The crews used wheelbarrows to move the earth to the pit and a small elevator to bring it to the surface. The annular space between the outside of the liner plate and the earth was filled in with cement grout, forced through plugs fabricated into the liner plates.

The work had only one discouraging aspect from the public-relations standpoint. It denied our local "sidewalk superintendents," of which I freely admit being one, an opportunity of getting a close-in view of the work. But aside from that, the merchants were well pleased with the cleanliness and lack of business disruption that a major project of this nature entailed. The work proceeded on an orderly schedule and was completed by the middle of September 1951.

The sewer was designed by Charles M. Dixon, City Engineer, and the construction work supervised by Eugene Polleys, Assistant City Engineer.

Community Advertising Must Reach Local Citizens, Too

By WILLIAM G. IRVING
Town Advertising Associates
210 Main Street
Hackensack, N. J.

MANY communities, from the whistle-stop to the outsized metropolis, are waking up to the fact that advertising and public relations can be used as soundly and effectively to sell their own facilities and advantages as they are used to sell soap or a cruise to a Caribbean island.

In a country in which competition is king, a community neglects its own advantages at its peril. Obviously, the stakes are big. The country is in the midst of a mighty effort to arm itself, and to solidify the economic foundations of the democratic system. The benefits of bringing just one new fair-sized manufacturing establishment to a city can be computed in actual dollars and cents. A single enterprise employing 500 persons at an average weekly wage of $50 will mean a total income of $25,000 weekly, $108,333 monthly, and $1,300,000 yearly—a powerful infusion of economic vitality to be transmitted to a community.

A well-rounded, integrated promotion program should not only be designed to sell the advantages of the community to the outside world, *but should also include ways of interpreting that program and its purposes to every inhabitant of the community.*

One simple and effective method is to reproduce national advertising in the local press. This will help to remind the residents of the effort under way, and will familiarize them with the message being used to focus attention on the city.

Each citizen becomes a walking advertisement if he likes his city, and believes in its future. The taxi-driver who transports a fare from the railroad station to a hotel may be talking to the head of an important corporation and what he says about "Americanville" may conceivably form a lasting impression about the town on a man responsible for command decisions on new factory branches or offices.

More important, by being informed, by being consulted, the residents become more keenly aware that the welfare of the city affects their own prosperity and growth. The people see themselves as stockholders in a big enterprise whose steady progress brings them security and happiness. Sell that very obvious idea to your populace, and you've added a mighty voice to your campaign to attract others.

The cooperation of the town's business, real-estate, commercial, industrial, financial, and professional men is essential in a soundly based campaign to sell the community beyond its borders. Mutual respect, trust, and understanding should develop to the point where a valuable exchange of ideas and information can take place. The city government needs the specialized knowledge and information available to these men as ammunition in the broader campaign. The city's private interests need a reputable municipal government that is alert, progressive, and efficient, as an inducement for new residents and new enterprise.

Various committees can be set up among the town's leaders in business, finance, industry, and commerce. The aid of civic organizations should be sought, and "booster" groups formed. These units can yield valuable ideas, and contribute priceless effort. Each lead produced by the city's promotional program should be turned over to the person or group most qualified to handle it.

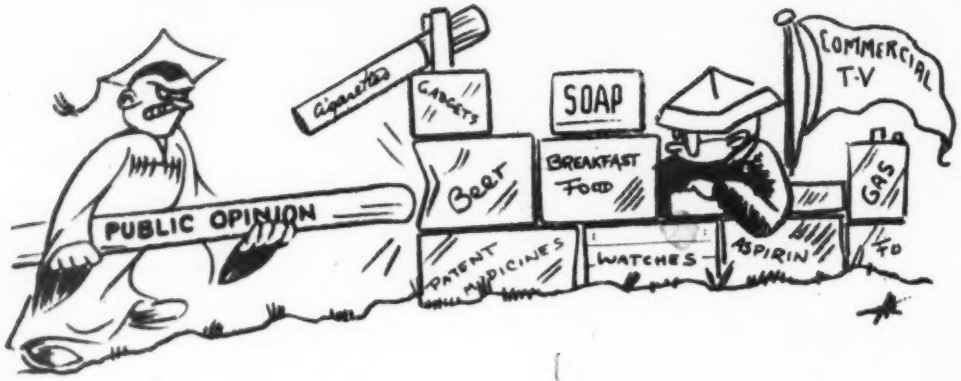
How and where the city's story can best be told is the responsibility of the advertising and public-relations experts in whose hands these aspects of the program have been placed. Now, in the day of simultaneous industrial expansion and decentralization, the community's story should reach executives in their board rooms, managers in their shops, and just plain people on the streets and in their homes.

Benefits will be felt all the way down the line—in the pay envelopes of workers, in building and real-estate activity, in humming shops and stores, in the network of utilities, in municipal improvements, playgrounds, parks, libraries, schools, and hospitals.

The author was formerly head of the Community Advertising Department of *The New York Times.*

Stockton, Calif., Manager Post Open

THE City of Stockton has a vacancy in its City Manager position, with a salary range of from $12,000 to $18,000 per year. Starting salary is dependent upon applicant's education, experience, and suitability for the position. Experience as a City Manager, County Manager, or outstanding Assistant City Manager is required. Preferred age limits are 35 years to 55 years. Write to Personnel Officer, Room 222, City Hall Building, Stockton, Calif., for application forms on or before February 15, 1952.



Our Fight for Educational Television

By FRANK P. ZEIDLER
Mayor
Milwaukee, Wis.

THE possibilities of non-commercial educational television in Milwaukee were brought to my attention by the Honorable David Lawrence, Mayor of Pittsburgh, President of the United States Conference of Mayors. In a letter of April 6, 1951, Mayor Lawrence wrote:

> The Federal Communications Commission, which regulates radio and television, has just proposed to reserve a television channel in your city for use by its schools, educational institutions, and quasi-public civic and community organizations for non-commercial, educational purposes. . . . It is, therefore, a highly valuable and priceless educational asset to your city—in some cities its commercial value would run into millions of dollars. . . . These TV channels represent one of this country's most valuable natural resources. It is imperative that they be used in part as "schools of the air." Unless channels are reserved now, so as to give educators an opportunity to use them when they are able to do so, they will be forever lost to education. Provision for educational television, therefore, must be made and kept now or never. . . .

To Expand Education

As the educators' tool, television can revitalize and expand education to the same extent that the development of printing did in the early days of the Renaissance. . . . It was in view of this educational potential of television and as the result of the support given by colleges, educators, national civic and community groups, and U. S. Senators, both Democratic and Republican, to the demand that channels be set aside for future educational use, that the Commission now proposes to reserve certain channels for this purpose, one of which is to be in your city.

This statement by Mayor Lawrence reflected accurately my views as a person who had served seven years on the Board of School Directors of the Milwaukee Public Schools. Accordingly, I referred this matter to the Milwaukee Common Council which appointed a special committee of educators and other citizens, including representatives of commercial stations competing for the same channel.

Members of the Common Council had previously expressed their pronounced dislike of a single television station, now operated in the City of Milwaukee, which is affiliated with our largest newspaper. The competing interests of the educators of the city and the commercial applicants for the channels were such that the Common Council reached no decision. Leading educators in the city then formed the Milwaukee Educators' Committee on Television, of which I am a member. We submitted to the Federal Communications Commission our sworn statement in support of the Commission's proposal to reserve Channel No. 10 for educational television.

This 95-page document, entitled "Milwaukee Needs Educational Television," contained statements on the administration, programming, and cost of educational TV, and evidence of the educational resources, citizen support and official actions needed to realize the project.

Conclusions of Milwaukee Study

Ten conclusions drawn from the evidence at hand were as follows:

1. Milwaukee needs educational television.
2. The best use of television for education can be made with a publicly owned station whose facilities are available to all bona fide educational agencies in the community.
3. Milwaukee should have its own non-commercial, educational television station.
4. Milwaukee can administer and operate an educational television station.
5. Milwaukee can program an educational television station.
6. A comprehensive exploration of costs will undoubtedly establish that Milwaukee can finance an educational television station.
7. The people of Milwaukee want an educational television station.
8. Milwaukee educators have begun planning and intend to continue planning in every detail with respect to the building and operating of such a station.
9. Time is needed for this detailed study.
10. The reservation of Channel 10 for non-commercial educational use in the Milwaukee area—an area having more than a million people—should be continued.

This report to the FCC shows further that the Milwaukee School Board unanimously favored the use of Channel 10 for educational purposes and that the Milwaukee Vocational School, a separate organiation, is prepared to spend funds to operate such a station in its own extensive building facilities. In addition, support is recorded from labor organizations, welfare organizations, and civic groups.

This imposing array of citizen support brought a countermeasure from three competing commercial interests—two of which are owned, as of the latest record

available to us—by agencies outside of the City of Milwaukee. These agencies offered 15% of the time, *if* they got the stations, for educational purposes. This offer was transmitted to the Milwaukee Common Council.

The principal attack on the educators took the shape of implications that they are not competent to handle such a medium as TV and that public funds should not be expended for this purpose. The Common Council action supporting this offer passed. I vetoed the resolution, stating that the offer was a mere bagatelle of a promise and that it contained many loopholes. My veto was sustained.

The proposition of the Milwaukee educators now rests with the FCC.

Estimated Costs

Estimates of the costs of operation submitted with the report are:

I. Plant (Capital Investment)	
a. Building — complete facilities for administration and studio	$300,000
b. TV equipment—basic unit plus one mobile unit	386,525
Total	$686,525
II. Operation (Annual Costs)	
a. Programming	$ 50,000
b. Broadcasting and engineering	
1. Personnel	161,772
2. Equipment replacement	77,305
Total	$289,077

This committee wishes to report that it received excellent cooperation and help from persons consulted for this information. Figures on equipment and operational costs were obtained mostly through the friendly help of the management of Station WTMJ-TV. The cost of the building is an estimate of a well-qualified architect; however, it is possible that this cost will not be incurred, since the Vocational School offers substantial space in its building for this use.

The possible total needed expenditure required of approximately $500,000 for moderate operation compares favorably with the present totals of $2,755,001 to be spent by the Board of Vocational and Adult Education for educational purposes, $21,227,972 by the School Board, $1,654,567 by the Milwaukee Public Library, and $486,650 by the Milwaukee Public Museum. This makes a total presently expended for educational purposes, out of the city funds alone, of $26,124,190.

Kansas City Managers Form Association

H. E. McMILLEN of El Dorado was elected president of the Kansas Association of City Managers, formed at a two-day meeting, November 8-9, held at El Dorado, and attended by 23 Kansas city managers. Vice-president is W. F. Johnson, of Emporia, and J. H. Wigglesworth of Lawrence is secretary-treasurer.

What a Businessman Hopes To Accomplish as Mayor

By GEORGE R. DEMPSTER *
Mayor
Knoxville, Tenn.

IN PAST YEARS the lack of cooperation between the various municipalities in our state and the close cooperation among the rural representatives in the Tennessee legislature made it possible for the counties to receive 2 cents of the 7-cent gasoline tax and the cities to receive absolutely nothing, even though more than 30% of the gas tax originates from traffic on city streets.

It is my purpose to attempt to form a coalition between the highway officials of the various counties and the county judges and the municipal officials, with the hope of obtaining 1 cent from the gas tax without disturbing the 2 cents now allocated to the county. The municipalities are gradually being strangled by the demand for additional services and their inability to tap additional sources of tax revenue such as has been readily available to the states and the Federal Government.

The 1 cent out of the gas tax in Tennessee, if allocated to the cities and towns, would total about $6,500,000—with approximately $567,000 coming to Knoxville. This would enable us to meet the spiraling wage hikes and other items affected by the present inflation, and put the finances of Knoxville on an even keel. Further deficits would be prevented and the gas tax would be placed where it belongs—at the point of origin. Taxation without representation has never been popular in America, and the cities and towns of Tennessee are only looking for a child's portion of this 7-cent tax. This can be allocated by the state without seriously crippling the state's financial program covering roads, etc.

Knoxville has a very bright future and the prospects for additional industries along Lake Loudon at the headwaters of the great TVA chain of dams can be materially increased, once the pollution is removed from that body of water. In a recent bond referendum the citizens of Knoxville voted nearly three to one to construct a sewage-treatment and disposal plant, the plans for which have been gathering dust in the City Hall for the last five years since they were completed by Greeley & Hansen, one of the leading engineering firms in America. I expect to brush the dust from these plans and move into the construction of this plant as quickly as possible. The removal of this contamination will allow this municipality to compete for textile mills and rayon plants looking for suitable locations in the South.

The class of native labor in East Tennessee is excellent. The people are alert and aggressive, loyal American citizens, who attain their ends by peaceful means and who give value received for salaries paid them. The outstanding success made by the Tennessee Valley Authority, the Atomic Energy Commission, the Aluminum Company of America, and the American Limestone Company indicates the high character of native labor here.

It is my hope, also, to make Knoxville the most undesirable place in the nation for racketeers, crooks, bootleggers, and law violators of all types. The Police Department will be unshackled, and the Chief of Police instructed to enforce the law against any and all alike. In this effort I shall solicit the help of all local citizens of good will.

* EDITORIAL NOTE: George R. Dempster, 64, president of one of the largest steel fabricating plants in Tennessee, took office January 1 as the new Mayor of Knoxville, population 130,000. He was elected to serve a four-year term. He had previously served three terms as City Manager of Knoxville and one term as City Councilman.

Mr. Dempster, well known to municipal officials throughout the United States for his firm's contribution to low-cost and efficient bulk-refuse collection—the Dempster-Dumpster System—was asked by the editors of THE AMERICAN CITY to outline briefly what he, as a businessman, hopes to accomplish as mayor. He gives here the three major Knoxville problems he aims to solve.

When 19 years old, George Dempster went to the Panama Canal as a steam-shovel engineer. After five years there, he returned to the United States and entered the construction business with four brothers. Later they developed the truck-mounted Dempster-Dumpster, which hydraulically picks up, hauls, and empties a multiple number of detachable containers. These big steel containers are spotted at materials-accumulation points and loaded by the user.

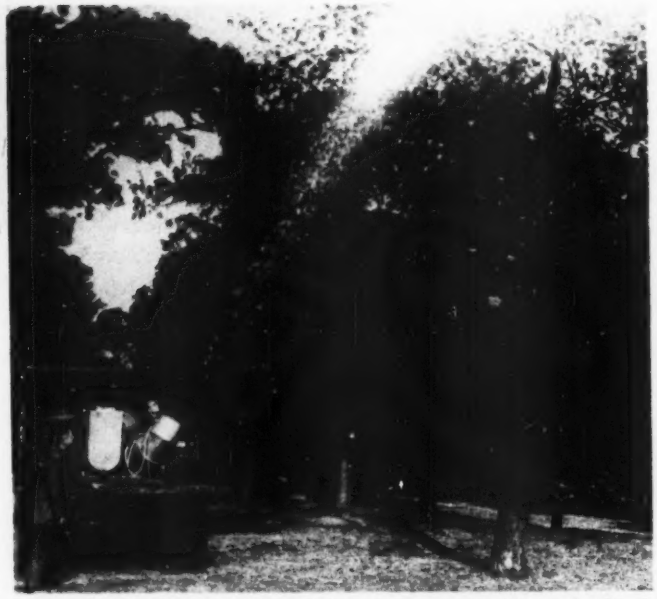
In addition to the Dempster-Dumpster and other allied equipment, Dempster Brothers, Inc., now also manufacture the Dempster-Balester, scrap-metal baling presses, and the Dempster-Diggster, hydraulic excavating shovel.

BALTIMORE PROGRAMS ITS

TREE CARE

By F. S. GRAVES
Assistant Park Forester
Baltimore, Md.

The hydraulic sprayer is capable of reaching a height of 70 feet on a calm day. Here A. D. Dunnigan, of the Bureau of Parks, operates the nozzle.



Baltimore's mist blower is able to deliver the spray material to a height of 100 feet. In this photograph H. L. Sappington is operating the machine, and Frederick S. Graves, Assistant Park Forester, supervises the spray operation.

THE forestry division of the Bureau of Parks in Baltimore, Md., under the direction of Superintendent C. A. Brooks, has a well-defined and thorough Insect Control Spray Program. It begins in the spring, as soon as the temperature rises above 40° F., and ends in the fall well after the leaves have gone.

Our spraying equipment consists of a Fitzhenry-Guptill hydraulic sprayer with a 500-gallon tank, mounted on a 3-ton Brockway truck with a direct take-off, capable of developing a pressure of 600 pounds per square inch. In addition, we have two mist blowers, an Iron Age and a Buffalo Turbine. The hydraulic is used for spraying in parks and squares where there is little chance of damage to cars and property from the overdrip. It also serves other purposes, such as liquid-feeding, foliaspraying, and chemotherapeutic treatment for controlling Dutch Elm disease.

Spring Spraying

We start our "dormant spraying" in the spring as soon as the weather permits. For this we use either a miscible or an emulsified spray oil at the rate of 15 to 1 for the control of various types of scale. The heaviest infestations are in the more densely populated and industrial areas, so we try to obtain a complete coverage of all the trees affected, if time permits, before the leaves break. To combat it further, we add summer oils to our sprays throughout the season whenever the young insects are crawling in considerable numbers. We cannot hope to get rid of the scale entirely, but persistent spraying keeps it to a minimum and saves a lot of trees, especially pin oaks. It also cuts down on our pruning.

As soon as the buds break and foliage starts growing, the aphids begin to feed on various types of trees, such as elders, maples, elms, and planes. We try to apply our first spray of nicotine and soap or summer oil before the leaves start to curl and the lice become abundant and extremely destructive, but often it is impossible to do this because of the weather. As numerous generations appear during the season, we spray off and on all summer, whenever new hatches are made.

As the leaves come out on the planes, anthracnose develops on the leaves and twigs. This is not a serious problem with us and is of short duration, but we give them a fungicide spraying with fermate, which greatly reduces the damage and stops the leaves from falling. This is a very toxic spray and great care must be taken in using it, but we feel that its effectiveness on fungus disease justifies its use.

The tent caterpillar also starts feeding during this period and although it is one of our lesser problems, we spray with a lead arsenate solution combined

Detailed insecticide schedule extends through the warm-weather period to keep the trees healthy

with a sticker and spreader wherever we find it.

When the leaves are three-quarters grown on the elms, we apply our first treatment for elm-leaf beetle, using 25% liquid DDT in our mist blower and 50% wettable DDT in our hydraulic sprayer. We cover the underside of the leaves thoroughly. Three weeks later, when the trees are in full leaf, we follow up with another spraying. At the same time we cover the trunk and the limbs heavily in our first of several sprayings for the control of the elm bark beetle, which carries the Dutch Elm disease.

Wherever we remove a diseased elm, we treat the trunks of neighboring trees of the species with a mixture of paradichloribenzine and cottonseed oil boiled together to dissolve the crystals. The results obtained from this are well worth the time spent in labor. The trees are also given a chemotherapeutic treatment with Benox, which is used in the proportion of 2 pints to 25 gallons of water on smaller trees, and 1 gallon to 100 gallons of water on larger ones. The hydraulic sprayer applies the mixture with hydrospears. This treatment has proved itself, for in no case have we found Dutch Elm disease on trees treated this way, even though they be very close to infected ones and where we know the beetle to be active.

Tussock moths are present in great numbers in Baltimore—both the *Hermerocampa leucostigma* and the *Halisiodata maculata*—and give us a lot of trouble. There are usually three generations of them, the first young caterpillars hatching the first part of June and the last late in summer. They prefer the Carolina poplar, of which we have many on the streets, but also attack planes, horse-chestnuts, elms, and maples. For these we use a 25% liquid DDT spray with lead arsenate added, but it takes persistent spraying to keep them under control. We are also resorting this year to the old method of banding the poplars with Tangle Foot. We have constant complaints that the caterpillars crawl over porches and get into houses. Their sting leaves a painful rash.

Japanese Beetle Diminishing

Japanese beetles have been very troublesome in the city in past years, but this year they seem to have diminished about 50%. It is not quite known yet whether they have permanently declined that much from their peak, and they are still present in sufficient numbers to cause a lot of damage. We like to think that they are less numerous because Tiphia wasps have been introduced in this area and the use of the Milky Disease Spore Dust in treating the soil has been encouraged. Their emergence here may vary from year to year about two weeks, according to the weather, but they generally appear about the middle of June and gradually decrease until October. We use 25% DDT in our mist blowers and 50% wettable DDT in our hydraulic sprayer with a sticker and spreader added. In all of our spraying we stay away from the more toxic materials in order to protect the public, as two-thirds of our spraying is done on the streets.

The Bureau of Parks also rents out about a thousand beetle traps at a small fee of 30 cents apiece for two years and 10 cents for extra bait. These are obtained every year from Dr. Langford at the University of Maryland, at College Park.

In the latter part of July the mimosa webworm spins its web and starts to feed on the mimosas and honey locusts. Although there are not so many mimosas in the city, the worm has wrought its havoc on most of the locusts in the parks and squares to the extent that they face complete extermination within three years. Even though we spray with a strong solution once before they appear and twice after, it seems nearly impossible to get any control, as they are well protected by their stout webs. All of the trees die about the third year after successive attacks.

Toward the last of August the fall webworm starts feeding on poplars, elms, and ash, which we spray with a lead arsenate and DDT. The webworm lasts through September, requiring several sprayings.

When the leaves are gone in the fall, we resume our dormant spraying, concentrating mostly on the elms and pin oaks as long as the weather permits, and with that we call it a season.

In Baltimore the greatest threat to the welfare of our shade trees is the canker-stain disease on planes, which is killing them by the hundreds, and for which no means of control has been found; and the Dutch Elm disease, which has reached epidemic proportions in the city. As we have a large proportion of these varieties on our city streets, it is a major catastrophe. It will be a problem to replace these fine trees with suitable varieties that will withstand the ravages of disease.

Mayors Association Meeting in New Jersey

Mayor G. Quinn, of Bogota, N. J., and Former Mayor Harry E. Forsthoff, of Leonia, N. J., are seated in a 1900 Ford owned by the Westwood (N. J.) Fire Department. Standing are Fred M. Link, Mayor of Westwood, and Henry Nadig, editor of *The American City's* MPR department. The occasion was the annual meeting of the Bergen County Republican Mayors Association last November, which Mr. Nadig addressed on the subject of municipal public relations. Mayor Quinn succeeded Mr. Forsthoff as president. Emil Goering, Mayor of Paramus, was elected treasurer, and Milton G. Vottee, township committeeman of Teaneck, treasurer.

Government by the People

Community clinics and development councils promote many local improvements in Arkansas

By C. HAMILTON MOSES
President
Arkansas Economic Council and
State Chamber of Commerce
Little Rock, Ark.

A POLITICAL leader sometime ago included Arkansas among the states which he called "America's Number One economic problem."

Arkansas accepted the challenge. For too long Arkansas had ranked first only alphabetically among the states, although, geographically, it possesses many advantages.

Topography and Economy Varied

Its topography varies from the scenic mountain terrain of the Ozark foothills in the northwest to the rich valleys of the Arkansas, White, and Mississippi Rivers. Its Grand Prairie is a rice bowl and duck paradise. The area's economy is diversified and the people of the state are resourceful. Livestock, orchards, poultry, grapes, and small grains support a stable agriculture. Oil, natural gas, and minerals such as bauxite are factors contributing to growing industrial development. But something was lacking.

The Arkansas problem, closely akin to the story of the South since the Civil War, is one that could not be answered by any government above the home-town council. It is a problem familiar to every mayor, alderman, and community leader.

That problem is leadership. It is one that every community must solve if it is to provide the facilities for enjoying the inalienable right to the "pursuit of happiness."

Since 1943, an unusual community-leadership program has been at work in Arkansas. This program, sponsored by the Arkansas Economic Council, an organization composed of 1,200 citizens and the Resources and Development Commission (a branch of the state government), is designed to encourage each community to solve its own problems.

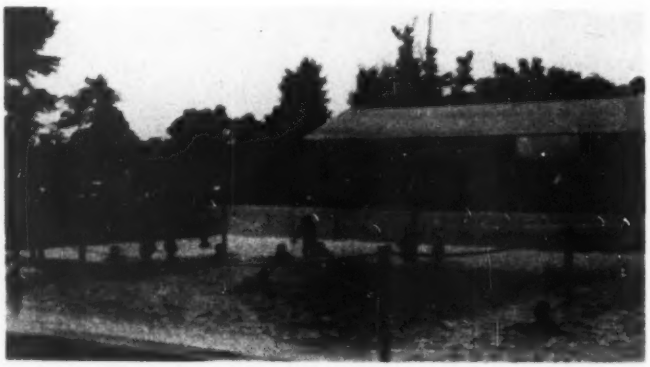
These state-wide agencies provide community counselors to carry out this program. They stimulate citizenship interest in local problems by conducting Community Clinics. These are town forums where all citizens get a chance to air their views on home-town improvements.

Frequent trips are made by these "community-development counselors" to keep alive the enthusiasm brought about by the Community Clinic, and to see that their ideas are put into action.

"Clinics" Lead to Permanent "Councils"

A direct result of the so-called "Arkansas Plan" has been the organization in many municipalities of Community Development Councils. These bodies, representative of the organized groups in the community—civic clubs, churches, veterans' groups, labor unions, farm agencies, and women's clubs—furnish the leadership for community action.

To the Council, any citizen or organized group can go with complaints or suggestions or ideas. Its influence



More than one Arkansas community through Clinic and Council action has undertaken the building of a swimming pool, such as the one depicted here.

"Sidewalk Superintendents" actually build some new pathways in Community Council towns. Pictured here is a project under construction in an Arkansas community as a result of the "Build Your Own Home Town" program.

through its organization representatives facilitates the job of getting the cooperation of the majority.

After considering the ideas proposed during the Community Clinic, and after listening to its membership, the Council selects the program. Short- and long-range projects are adopted. Some projects are assigned to certain groups, while the broad program that demands community-wide support is undertaken by the Council as a whole.

Committees

Committees are set up to undertake the planning and hard work which can overcome major obstacles.

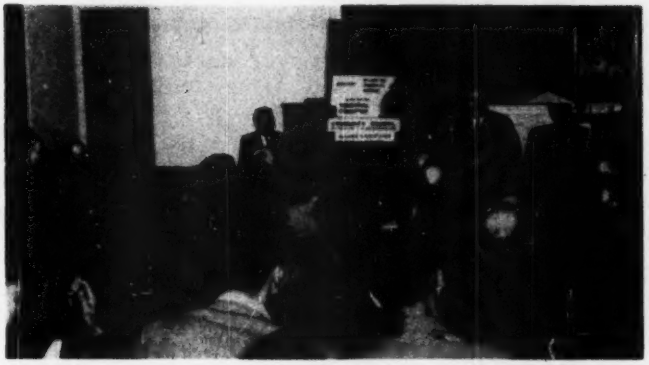
Primary among these are perpetuating Industrial Committees, and usually one of the first jobs requiring action is the drawing up of an inventory of community facilities and resources, basic information needed for any industrial-promotion program.

Great emphasis is placed on the "Build Your Home Town" aspect of the program—to make it a better community in which to live and raise children, and to maintain the interest of high-school graduates and young people so that they will not leave the community and the state for other areas. It is recognized that the quality of schools, hospitals, recreation, streets, churches, etc. is an important factor considered by the industrialist in locating a new plant or relocating an old one.

Community Clinics

Community Accomplishment Contests have been particularly useful devices for stimulating local action; for one thing, there are no "losers." Every community that enters and accomplishes one or several projects is bound to be ahead.

More than 500 community meetings have been held throughout Arkansas since the program first started. In the past two years, Community Clinics have been held for the first time in 171 communities, and repeat performances have been held in 40 places.



The author, C. Hamilton Moses, in a characteristic pose as he addressed a community meeting in the small town of Heber Springs, Ark., in November of 1951.

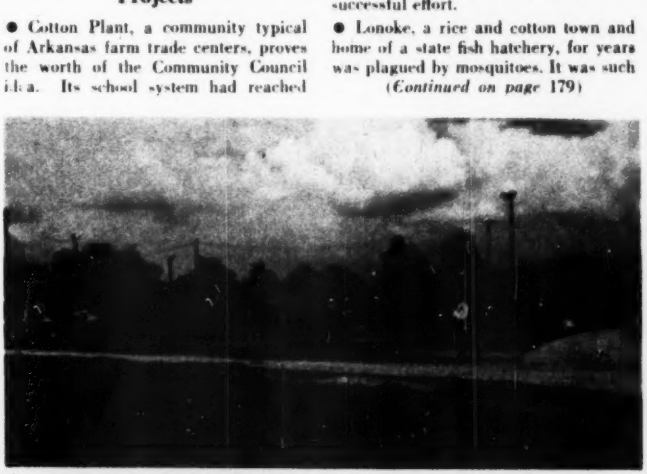
What has happened as a result of this approach to community development?

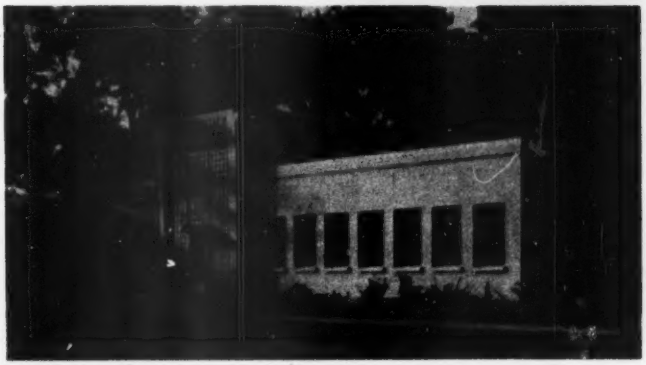
Some Examples of Successful Projects

● Cotton Plant, a community typical of Arkansas farm trade centers, proves the worth of the Community Council idea. Its school system had reached the legal limit of bonded indebtedness. Physical repairs to the school plant were absolutely necessary. The Community Development Council took the lead in raising $10,000 to be spent on the schools. Students enjoyed better conditions as a result of the Council's successful effort.

● Lonoke, a rice and cotton town and home of a state fish hatchery, for years was plagued by mosquitoes. It was such

(*Continued on page* 179)

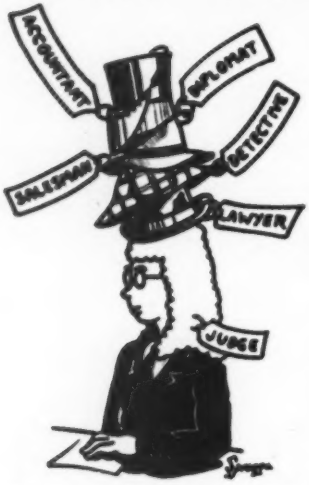




This $17,000 steel athletic stadium at Newport, Ark., is the result of an awakened citizenry acting through its Community Council and Chamber of Commerce.

A contrast between old and new. Beside the courthouse, built with public funds, is the new library which a community erected after private citizens put up the capital. Clinic and Council activity helped stimulate the enthusiasm for the project.

The importance of salesmanship



The tax assessor-collector's wardrobe.

Pointers For Tax Assessors and Collectors

By **WILLIAM E. DAVIS, Jr.**
Executive Secretary
Tax Research Association of Houston and Harris County, Inc.

A TAX assessor-collector who does his job well must be a man with a high standard of values, and plenty of patience, ability, knowledge, and salesmanship to go with it. Salesmanship does not mean playing politics. Indeed, the tax assessor-collector, depending on politics, not only does an injustice to the taxpayers who employ him as a public official, but is digging his own grave.

Putting it another way—diplomacy, yes; politics, no.

The individual serving as assessor-collector of taxes must, to begin with, have a thorough understanding of the laws of his state, county, and municipality pertaining to his job. And he must closely follow modifications and changes resulting from judicial decisions in tax matters.

Modern Tools Essential

The man collecting taxes must insure maximum accuracy. He must do his level best to collect the taxes, and make his assessments fair and equitable.

Both objectives take modern tools: maps, clerical-machine equipment, and continuous in-service training of personnel.

More than any other public official, the man who makes the assessments and collects the taxes is the individual who meets the most citizens. Hence, it is important that the tax assessor-collector be courteous, fair, and efficient. The impression he conveys sometimes is the impression the citizen receives of the entire municipal or county government.

In a way, the tax assessor-collector is caught in the middle of the tax squeeze—the constantly increasing financial demands on citizens by all levels of government.

It is estimated that about a year ago, the citizen's average dollar was spent as follows:

- 18.3 cents for food, including about 53 different taxes on a loaf of bread.
- 13.8 cents to run the house, including about 154 different taxes on a bar of soap.
- 9.3 cents for clothes, including about 189 taxes on a suit of clothes, or about 125 taxes on a cotton dress.
- 3.3 cents for recreation, including an estimated 205 taxes on the family car, and about 201 taxes on each gallon of gas.
- 4.1 cents for medical expenses, personal care, and jewelry, all heavily taxed.

The municipal tax-department head, however, is one of the very few who assess and collect the tax directly from the citizen. Over 95% of the number of taxes paid by the citizen are hidden; in their collection there is no direct contact with the consumer. The reverse is true in the case of the municipal tax assessor-collector. He must, in a way, take the rap for the collection of all of the seemingly endless other taxes the same citizen pays.

What can the tax assessor-collector do about it? Well, he can sell the citizen on his tax system, providing it is sound and equitable. He can show what the citizen gets for his taxes.

There will be times when the assessor-collector, even though an appointed official, must sell the mayor and other administrative officials on the adequacy of his assessment and collection system—just as much as he must "sell" the city's plan of services and improvements to the citizen. An informed city council can become a valuable salesforce for an equitable tax department.

A common problem for many assessors is statutory requirements on taxing personal property. Should a particular city not be taxing certain kinds of personal property (cash, automobiles, etc.), the assessor-collector might be overlooking an important source of revenue and equity to those taxpayers who are assessed. He must discover from personal experience and from the experience elsewhere what practical problems are presented in the assessment and collection of such personal-property taxes.

Armed with this information, the assessor-collector is in a much more favorable position to sell his superiors on the proper course to take in assessing and collecting those taxes. The foundation for such decision must be so thorough that the taxpayer will concur in the decision.

The rapid growth of many cities has imposed on the tax assessor-collectors the responsibility of remedial legislation. Frequently, they must initiate the legislation. There should be some more realistic approach to the ratio problem in assessing personal property, the full value of which is generally based on current values, whereas some pre-war level is used to assess real property.

The most practical and efficient assessment system is the one that is most easily understood by the taxpayers.

Government and Private Business Compared

The assessor-collector's department can be compared with a sales and production department of a private business. In assessing property he is a producer. In collecting taxes—and satisfying the taxpayer that he is paying equitably for worth-while programs and services—he is a salesman.

There are, of course, areas where government and private business differ. To quote Mayor Oscar F. Holcombe of Houston:

> There are a lot of people who think public business can be run and decisions be made just like one can do in private business. In my opinion, this is not the

case. Cities are operated for dividends in service while business institutions are operated for dividends in dollars. The man who holds public office is truly the servant of the people and it is hard for most businessmen to understand this.

Generally speaking, citizens can be divided into three groups: the apathetic, the vociferous, and the cooperative. With the support of his policy-making body and all departments, the assessor-collector can do much to awaken an interest in city affairs among the indifferent citizens. The vociferous and cooperative citizen groups can become salesmen of an equitable tax program and a worthy city program to awaken the large apathetic group of citizens. Ultimately, such a taxpayer can be sold if he is getting value received—provided the assessments are equitably made.

A tax assessor-collector who plays politics cannot be equitable. The tax assessor-collector who appeases the citizen of power and influence sooner or later will be called on to perform a favor he cannot grant. The result is a dangerous enemy.

Many opportunities will arise daily for the assessor-collector to sell his program. He can show the citizens the modern equipment that he uses, and explain how it saves money.

He can illustrate methods of assessments. He can show on the tax bills how the tax dollar is used.

Why such emphasis on the tax assessor-collector as a salesman? Well, more than $1 out of every $4 the taxpayer earns now goes for taxes. Next year, as much as $3 out of every $10 may go for taxes. To do a good job collecting his local taxes, the collector of those taxes must be a good salesman. And as every salesman knows, it's a whole lot easier to sell something meritorious than something half-baked.

Make your tax system sound and equitable, give your citizens improvements and services—and you have something they'll buy and be glad to pay for.

Modesty Can Be Overdone, Cities' Survey Shows

By GERALDINE B. NOVOTNY *
University of Connecticut
Storrs, Conn.

A RECENT study of two neighboring Massachusetts cities has revealed that communities are no exception to the rule that too much modesty may lead to misunderstanding.

Malden and Medford, Mass., were chosen because it was felt they were as similar as any two communities can be in terms of population, common tradition, large commuting groups, and degree of industrialization. Both cities are suburbs of Boston with about the same proximity to Boston, and it was believed they had about the same amount of industry. Since the two cities were originally part of the Massachusetts Bay Colony, backgrounds and tradition were similar. Malden, however, was considered more successful civically.

Statistics showed that the population in Medford has increased steadily while that in Malden decreased prior to World War II. Due to population density, Malden's population is expected to decrease in the future. Malden is the fifth most densely populated city in Massachusetts, and has about 3,000 more persons per square mile than Medford. Population numbers usually decrease when lack of opportunity or social disintegration exist within a community. Malden was also found to be more highly industrialized. Malden's largest industrial plant employs more workers than do all the industries in Medford.

The degree of need for social service was partially reflected by the welfare load. In Malden, the welfare case load was consistently higher than in Medford, and greater need for social service was also revealed by higher Red Feather Quotas.

The Greater Boston Community Survey Index of Social Need, at the offices of the Boston Metropolitan United Community Services, offered another source of community comparison. In this index, single numerical ratings for each of 69 communities were made to reveal the need for health and welfare services on the part of each community. The twelve measures used as a basis for comparison in computing the index were: infant mortality, tuberculosis rate for new cases, tuberculosis death rate, median rent, juvenile delinquency, Massachusetts Society for the Prevention of Cruelty to Children case rate, per cent crowded households, per cent houses needing major repairs, Old Age Assistance rate, Aid to Dependent Children, per cent non-white and foreign-born white, and per cent population gain or loss, 1930-40. Malden was classified as an area with "greater than average need" and Medford as an area with "average need" in this study.

Other records showed that Medford has a higher percentage of owner-occupied homes, a larger number of homes with private bath, a higher median in the number of school years completed, and a lower percentage of draft rejections. In the area of civic accomplishments, Medford attained its Red Feather campaign goals at least twice within the past five years, but Malden has not reached its goals at all during the same period. Red Feather contributions from the house-to-house canvass ran more than 20% higher in Medford each year. As to participation in elections, more Medford citizens voted at election time.

Here, it seemed, was a paradox. On the one hand, Medford had a poor reputation for social achievement but statistics proved just the reverse. In the face of such evidence it was decided to consult experts in this field. Government experts, welfare workers, and university professors were interviewed. The question asked was, "In your opinion is Medford or Malden relatively more successful in its civic activities and accomplishments?"

Although opinion varied, those consulted were reasonably unified on the fact that Medford was a better community, but that Malden was more active and had a greater need for activity. This seemed to point to a correlation between need and formalized activity.

Malden has a better reputation. Everyone agreed that Malden told its story more effectively than Medford—"One heard more about Malden." Medford, however, is the better community.

The moral of the story is that if a community wants to be accepted for what it is worth, it should not be modest. To promote sound public relations, however, publicity must be founded on facts and deeds and not on empty words and phrases.

*This article is based on a graduate thesis prepared for the Boston University School of Public Relations.

$500 Million for Federal Aid Highways

APPORTIONMENT of the $500 million authorized as federal aid to the states for highways in the fiscal year beginning July 1, 1952, has been announced by Secretary of Commerce Charles Sawyer. The funds were authorized by the Federal-Aid Highway Act approved September 7, 1950.

The Act provides $225,000,000 for projects on the federal-aid highway system, $150,000,000 for projects on the federal-aid secondary system, and $125,000,000 for projects on the federal-aid highway system in urban areas.

Funds for urban projects are apportioned in proportion to population in municipalities and other urban places of 5,000 or more. The funds will be available for expenditure until June 30, 1955.

Institutes and Area Meetings Planned for 1952 by State Municipal Leagues

OF THE 28 state municipal leagues that responded to an inquiry from THE AMERICAN CITY, 18 report that they will conduct regional meetings and/or sponsor special institutes or other training programs for municipal officials during 1952, *in addition to their regular annual conferences.*

Local officials in those states with regional meetings or special institutes will have, therefore, ample opportunity to "bone up" on the many new technical and other developments affecting municipal-government techniques and practices. And, usually, these meetings and institutes will be at places convenient and "close to home," so that long out-of-town trips will not be required.

Several state-league directors comment on the fact that their regional organizations and meetings are the backbone of the state league. Not only do they encourage maximum participation from local officials, and increased interest, but regional meetings or institutes offer good opportunities for league staffs to learn of municipal practices and problems about which they may not be aware.

The following points were also made by various state-league executive directors:

1. Some yardstick should be applied for separating the "wheat from the chaff," so that too many municipal-official meetings will not be held. Public officials have too much to do and too little time in which to do it to permit them to attend any meetings which are not well programmed.

2. It is advisable wherever possible to get the state to put municipal training schools under adult-education programs through colleges and universities, as an aid in conserving league-staff time and league finances for other matters.

3. It is easier to set up courses with homogenous groups, such as city managers, sewage-plant operators, etc.

4. For courses or institutes, instructors who are actually doing the job often work out much better than those well-versed in theory only. Course content must be kept practical.

5. Every effort must be made to secure up-to-date and worth-while information for use and distribution at regional meetings, so that current questions can be definitely answered.

Particularly outstanding among the state-league programs for organization of regional meetings and other courses is that of the League of California Cities, with 305 member municipalities. Howard Gardner, assistant director, reports that during 1951 attendance at the meetings held by the 13 regional divisions of the League totaled 9,900. Several other leagues, such as Minnesota, Texas, and Kansas, also report excellent attendance.

In a few of the less urbanized states, attendance at regional meetings is recognized as something of a problem. One suggestion made for this sort of situation was that regional meetings should be held only when there is a definite program to put across or a definite goal to achieve.

A digest of the state-by-state replies from the various leagues of municipalities follows:

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Alabama League of Municipalities

We usually hold during the year a series of 10 district meetings throughout the state. In 1950 our total attendance was 700. In 1951, because our State Legislature was in session, we did not have an opportunity to conduct the meetings. In addition, we sponsor, with the Alabama State Firemen's Association, an annual Fire College on the campus of the University of Alabama. This college draws approximately 175 firemen from the various fire departments and from organizations of the state that are interested in fire prevention and fire protection.

We sponsor other types of conferences, such as the one held December 6 and 7, 1951, known as the Alabama Citizens Conference on Community Planning. Very frequently we have other special conferences of various sorts, especially conferences of municipal officials, to discuss legislative matters, social-security developments, and other problems of cities. All of these are in addition to our annual convention.

ED E. REID
Executive Director

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Arizona Municipal League

Owing to the fact that the Arizona Municipal League is composed of only 46 incorporated cities and towns in the state, we do not hold regional meetings. Twice yearly, late in April and November, we hold conferences. All matters that might be brought up at a regional meeting are taken up at these meetings. Generally, there are about 165 officers of cities and towns in attendance at these conferences.

During the interim we compile such statistics covering cities' operations as are requested by our Executive Committee.

JOSEPH C. FURST
Executive Secretary

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Arkansas Municipal League

In 1950, the Arkansas Municipal League had a series of regional meetings throughout the state. We found that there was but little interest in these regional meetings, and feel that it is best in this state to plan such meetings only when we have a definite goal to achieve.

We do not conduct any schools, such as firemen's training or police training schools, because they are carried on by other groups. We have arranged this year for any elected official to attend an eight-week course at the Arkansas Law School in Little Rock for a study of municipal governments. This course is free to all officials who wish to attend, but we do not know what the results of this will be, as it does not start until April 10, 1952.

GLENN G. ZIMMERMAN
Executive Director

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League of California Cities

Regional Meetings: The California League has a well-organized regional-meeting program. The state is divided into 13 regional divisions, with every one of the 305 cities in the state included in one of the divisions. Each division elects its own officers, including a member of the State League Board of Directors.

Some of the divisions meet monthly, others bi-monthly, and others quarterly. Attendance at these meetings has exceeded 9,000 for the last 10 years. Without exception, these meetings are scheduled as dinner meetings, usually beginning between 6:00 p.m. and 7:30 p.m., with adjournment around 10:00 p.m. The officers of the divisions are responsible for arranging the programs which usually relate exclusively to the problems of city government.

It is our considered opinion that these regional organizations are the backbone of the State League. Most of the divisions have a set of by-laws governing local operations which call for regular meetings on specific dates, such as the first Friday in each month or the third Thursday every other month.

Special Institutes: The League sponsors, on a biennial basis, an Institute designed primarily for new mayors and councilmen. The last Institute was held in June of 1950; the next one will be in the spring of 1952. In 1950 approximately 500 new mayors and councilmen were elected at the April elections. We believed that if attendance at this Institute exceeded 200, we would have been well repaid for the effort. Attendance exceeded 400.

Schools: It is our opinion that in-service

training of public officials is essential if we are to continue to raise the standards of city government. It has been the policy of this organization for many years to encourage the development of schools for public employees. However, we feel that wherever possible, such schools should be conducted outside the framework of our organization, but with our wholehearted support. A partial list of the schools that we have supported includes the Institutes of Government at San Diego State College, the University of Southern California, and Sacramento State College; various short courses and institutes sponsored by the Institute of Transportation and Traffic Engineering of the University of California, and an In-Service Training Program for Policemen and Firemen conducted by the Bureau of Trade and Industrial Education of the State Department of Public Instruction.

HOWARD GARDNER
Assistant Director

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Colorado Municipal League

The one sure activity for 1952 will be our annual series of district meetings next fall. These take the usual form of question-and-answer session, with an exchange among attending members and state-agency representatives, and the League staff. Attendance has varied from poor to excellent, but, in terms of municipalities represented, there has been a broader representation than is drawn by our annual convention. Last fall we attempted to establish district organizations, which we hope will provide their own programs and allow closer examination of and cooperation on regional problems.

We have also in prospect a school for city managers next spring, patterned somewhat upon the Kansas model, but sure—at least initially—to be less ambitious. Still in the realm of talk only is a school for councilmen, such as the California League conducts.

Our League consultant, who is also a member of the Political Science Department of the University of Colorado, Professor Leo C. Riethmayer, has conducted schools for department heads of Boulder, Colorado Springs, and Pueblo, during 1951. The text used was ICMA's *Techniques of Municipal Administration*, and all "students" appeared well-satisfied with the courses.

I would suggest that the more homogeneous the group, the easier it is to work with. In other words, it is easier to set up a satisfactory course for city managers only, sewage-plant operators only, etc.

JOAN JOINER
Editor, Colorado Municipalities

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Georgia Municipal Association

During 1952, our Municipal Association expects to co-sponsor a number of training courses at the University of Georgia, at Athens. Among those projects now being considered is a continuation of the tax-assessors' schools which we have been holding for some years, a school for municipal finance officers and clerks, and one for city and county attorneys. These will be held at the University.

In addition, we expect to hold four or five regional conferences for public officials in various sections of the state.

I believe that these special schools and conferences are very valuable and we are trying to do more of this type of work each year.

ZACK ARNOLD
Secretary

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League of Iowa Municipalities

The only institute which the League of Iowa Municipalities has heretofore sponsored is conferences on Community and City Planning. A conference of this nature has been held for the past six years. It is co-sponsored by the League in conjunction with Iowa State College, at Ames.

While the conferences have been of a very high order, the attendance to date has not been any too satisfactory. A similar conference or institute will again be held in 1952.

MAX A. CONRAD
Executive Secretary

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League of Kansas Municipalities

The League of Kansas Municipalities has been holding six city district meetings in the spring of the year since 1932, with the exception of one year during the war.

These meetings, as described in the *Kansas Government Journal* from year to year, are designed to cover immediate administrative problems, especially those arising from tax levies, budget-making, accounting, and other general administration.

The total attendance at the city district meetings is approximately the same as, or possibly greater than, at the annual city convention.

JOHN G. STUTZ
Executive Director

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Kentucky Municipal League

The Kentucky Municipal League holds one annual conference of two and one-half days duration. At this general conference there are sectional meetings of (1) elected officials, (2) finance officers and city clerks, (3) city attorneys, (4) public-works officials, and (5) police judges and prosecutors. These are not schools but state-wide conferences, and they are virtually nothing but "shop talk."

In addition, we are co-sponsors of an annual three-day school for firemen held on the campus of the University of Kentucky. Approximately 450 Kentucky firemen will attend this school. In 1952 this Firemen's School will be held the first week in June.

If we had the manpower and the money we would provide regional meetings during the winter months to discuss topics similar to those we discuss at the annual conference. We are very much in favor of them.

CARL B. WACHS
Executive Secretary

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Maryland Municipal League

We hold two conventions each year for the Maryland Municipal League, one at Ocean City in June, the other in the fall. The year before last we held some regional conferences, dealing with general subjects, in various parts of the state. We hope to renew this series of programs next spring.

The University of Maryland has for several years conducted four-day tax assessors' schools, although not under the auspices of the Maryland Municipal League. Last summer the University held a two-day school for Maryland magistrates.

During the course of 1951, we held five evening meetings for Maryland police officials. These were well attended, enrolling something like 250 police officials each time, and were sponsored not only by the University, but also by the State Police, the Federal Bureau of Investigation, and other such agencies.

The University of Maryland operates an extensive educational program under a special agency for firemen throughout the state. There are only two fully paid fire departments in the state of Maryland, as far as I know—those at Baltimore and at Cumberland. All others are, at least in some measure, volunteer fire companies. The importance of this work is, therefore, apparent.

None of these schools discussed above is conducted by the Maryland Municipal League. The University is planning extensive schools of all sorts in this general connection, but they have not yet been implemented.

JOSEPH M. RAY
Executive Secretary

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Michigan Municipal League

Our plans for regional meetings, special institutes, conferences, etc., for the coming year are as follows:

We will hold a Management Clinic for the city managers of Michigan sometime late in January.

Beginning in February we expect to be holding a special institute for our finance officers.

We are planning a Purchasing Clinic again during 1952, similar to the one held last year.

Last December we held a special institute for municipal assessors, and a similar institute will be held again during November or December 1952.

In addition, we will schedule during the year about 10 regional meetings throughout the state. At these we bring in our municipal officials, for a period of a half day to a day, for a general discussion. In these sessions there is no so-called organized or planned program, but one of our municipal officials assumes a role of the presiding officer for the day and conducts a question-and-answer discussion on any and all municipal problems that the group might be interested in. Opportunities are thus afforded for exchange of ideas on the particular problems of the area from which the cities and villages are represented.

Sometime during the year we expect that our municipal clerks, our municipal attorneys, our engineers and public-works officials, our municipal planning officials, recreation officials, building officials, and the state association of sanitarians will be having meetings of one or two days. In each of these we cooperate with the group in planning the organization of their session.

There are some other sessions that are

(*Continued on page* 181)

M unicipal
P ublic
R elations

The City Tells Its Story

Edited by HENRY DAVIS NADIG
Executive Director, Government Public Relations Association

Municipal Movies Produced In Burbank and Philadelphia

BURBANK and PHILADELPHIA are two more cities that have found the production of municipal motion pictures particularly worthwhile public-relations ventures.

In Burbank, Calif., reports E. Clifford Hill, Administrative Assistant to the Manager for Public Relations, the pictorial story for the city's recently completed movie was developed especially to encourage citizens to take part in the functions of their government; become familiar with its administration and services, and to promote a feeling of personal pride in their community.

The 1,325-foot 16-mm. color film runs for 35 minutes, and consists of approximately 445 separate scenes with narration and musical background. It went into production in December 1950, and was previewed by civic, ministerial, industrial, business, and professional leaders of the city on April 19, 1951. Since its release, the picture has been shown to more than 10,000 people—before church societies, service clubs, civic and veterans' groups, schools, and the general public.

How "The Story of a City" Was Made

After the objectives of the film were clearly defined, the City Council ordered a survey made of available facilities.

Six producers, experienced in training, promotion, and public-relations film work, were interviewed. A story outline was developed for them for a working basis upon which to calculate approximate cost. Their facilities were inspected and examples of their productions currently in distribution were reviewed. Many story, treatment, and production conferences were held with each producer and his staff in order to provide equality in understanding of the problem of preparing a film, the main approach of which was to capture and emphasize those frequently overlooked qualities: the breadth, depth, and length of municipal services.

Along with suitability of material and facilities, including technical crews, decision to award the contract was considered in the light of proposed cost ranges from $11,000 to $30,000.

In view of the cost factor, the ability of the producer, the flexibility of the crew, the excellence of previous productions, further substantiated by favorable references, and the workability of this production unit with the city's operating organization, the contract, with a maximum figure of $13,500, was awarded to Burbank Educational Films of Burbank, Calif.

Burbank's Message

Perhaps the motif and message of the Burbank film could be summed up no better than in the words of the picture's narrator as the final footage montages and fades to a dramatic close:

"And so as the city makes its plans for the future, let power from the city lines turn the wheels of industry and brighten your home at night. Let your children sleep in the quiet safety of their beds; in the morning, you can drive to work on broad, smooth streets. Or, on a lazy Sunday, take the family for an outing in any one of the city's beautiful parks. Yes, enjoy the advantages of your city; but not just as a spectator or an outsider. Come to a Council meeting on a Tuesday afternoon, or read the City Charter; for the city is one of your valuable possessions. You own it and you run it; and when the time comes to assert your authority, when you go to the polls and cast your ballot, you are voting not only for whom you want, but also for what you want and how you want it done. For when the words, 'The Council So Orders' tell the City Manager to start the wheels of progress rolling, it is actually 80,000 voices saying, 'The People So Order.' For this is your city. This is your corner of America. This is BURBANK!"

Except for the technical crews, the production utilized city employees in the performance of their respective jobs, with a background of city buildings and equipment. Members of the City Council, the City Manager, and other city officials portrayed themselves. No special sets were built and nothing was rigged to depict anything that does not exist. Everything that was pictorially recorded was done so in its natural setting, state, and habitat.

From the city's recreational activities, "bit" players and "extras" volunteered their histrionic abilities and services. As a consequence, in addition to those mentioned above, the unusually large "cast" in the film was supplied by the members of the Burbank Civic Light Opera Chorus, the Burbank Theater Guild, the Burbank Youth Symphony Orchestra, the Municipal Band, and the Burbank Senior Symphony Orchestra. In fact, the entire musical background was provided by the latter aggregation of 90 pieces.

Two Philadelphia Films

In Philadelphia, the two new 16-mm. films, produced in color and sound, represent the first official venture of the city into motion pictures as a public-information medium. The films are a project of the "Know Your City" Office of the Philadelphia Commercial Museum. The new promotion office was set up by special City Council ordinance last March "to disseminate information about the City of Philadelphia at home and abroad."

Each of the films is 15 minutes long. The first film, entitled "Philadelphia—City of 2 Million," depicts the city's services to its citizens. It includes shots of city transit and transportation; the gas works; improvements to water quality and supply; waste collection and disposal; public-health centers and hospitals; welfare, recreation, education, culture, police and fire bureaus, and churches.

The second film, entitled "Philadelphia—On the March," covers the city's projects of today and the near

future. It includes scenes of new buildings dedicated to public welfare and health, water improvements, hospitals, housing projects and redevelopment areas, schools, recreation centers, transit, expressways, bridges, the Mall and Historical Park, flood control, and sewage treatment and disposal of waste.

The films were four months in production. The script by Henry Klein is narrated by John Facenda. News Reel Laboratory did the filming with Louis W. Kellman as producer and Paul Wendkos as director. More than 10 times the amount of film that appears in the finished product was shot, to insure complete coverage of the city projects and activities. Virtually every department and bureau head cooperated with the camera crews.

Several days after the preview by 500 city officials in October, more than 1,600 presidents of civic organizations were given a special showing. They were asked to take advantage of the free loan of the films for showing at their meetings. The films have also been shown over WFIL-TV, local television station.

Eugene and San Mateo Films

Eugene, Ore., has produced a color film, "A Budget in Action," which also makes news with its modest cost of $900. The film is cheaper, the city reports, than the cost of the usual annual report. It runs 45 minutes and has an accompanying tape-recorded commentary enhanced by a light musical background. It covers the processes of council authorization, budget procedure, and departmental operations, and ends with capital-outlay programs.

San Mateo, Calif., has produced a film, "Your City in Action," a black-and-white sound record of city activities, for about $800. Many other cities have produced travelogues and films on some aspect of city life. One outstanding recent example is the motion picture, "Your Street Cleaning Department," produced under the direction of N. M. Ulsch, Assistant Superintendent of the Street Cleaning, Garbage Collection and Disposal Department, of Jacksonville, Fla.

"A Stock-pile of Faith and Human Kindness"

THE threat of the atomic bomb has created a feeling of fear and frustration in many realty men, builders, and planning experts that threatens to stagnate ambitious redevelopment plans for metropolitan centers and to stifle urban-housing progress, Lee E. Cooper, real-estate editor of *The New York Times* and president of the National Association of Real Estate Editors, warned in Atlantic City on December 7.

Addressing the annual convention of the New Jersey Association of Real Estate Boards at the Hotel Traymore, Mr. Cooper reported a spreading attitude of defeatism with respect to the improvement of our big cities, inspired by the thought that long-range replanning and heavy expenditures to undo the mistakes of the past were hardly worth while because of the possibility that nuclear weapons would wipe out some of these population centers.

He urged that these prophets of doom turn to more aggressive, confident action to make American cities better places in which to live and work, and expressed the opinion that such a program of itself would tend to restore confidence of the people in the permanency and relative stability of property values in our big cities. On the other hand, he added, if the planners and business leaders succumb to the theory of doom and abandon their projects and plans for future improvements, the result will be costly deterioration as effective in many ways as actual bombing.

It is useless [Mr. Cooper declared] to think of transplanting the great masses of the people, and their places of business, into the fields and caves and mountain fastnesses as a security measure.

American business centers and residential centers are here to stay. Although the "downtown" stores may have to be content with a smaller percentage of retail sales and will have to go along with decentralization trends by establishing suburban branches, the central districts will remain as the heart and core of the nation's shopping facilities.

What will happen in the face of continued outward migration and government pressure for the dispersal of industry is that many satellite communities will spring up with the older centers remaining as the hub. Most industries must still stay within "commuting distance" of the central areas to get the advantages of metropolitan services.

"Previous world fears of destruction historically have turned out to have been unfounded," the speaker explained, pointing to the expressions of doom which followed the invention of gunpowder, and later of the submarine, and then of the airplane.

The democratic nations should become more aggressive in pursuing their ideologies, instead of being merely on the defensive against Communism and placing so much dependence in a fortress of gold or a defensive shield of atomic bombs of our own. *What the world needs instead, is a stock-pile of faith and human kindness.*

A Fine Idea If Your City's Attractive

Greetings from Olympia,
the Capital of the Evergreen State—
Washington

Mayor R. A. Swanson

Mayor of Olympia, Wash., R. A. Swanson, misses no opportunity to promote his city. The reverse side of the mayor's calling card carries an aerial photograph of the capital and the adjacent Des Chutes Waterway.

Time to Spruce Up Old Municipal Oil Specifications

By ERNEST L. KORB, *Sales Manager*
Wholesale Marketing Division
The Pure Oil Company
Chicago, Ill.

What's wrong with them and what to do to obtain the best in petroleum products

IT IS the purpose of this paper to discuss suggested simplified standards and specifications as they relate to products supplied by the oil industry. Revisions are in order in some of the present antiquated municipal-specifications requirements. Bringing them up to date, consistent with today's knowledge, will insure the quality which is available.

While this discussion treats the subject from the standpoint of petroleum products, some of the suggested cures may apply equally to other products. Specifications which take cognizance of recent improvements in product quality, brought about by scientific research, improved design, better manufacturing processes, etc., are a "must" for any purchaser, whether he is buying lamp bulbs, tires, engines, petroleum products, or clothing.

Performance Is King

The petroleum industry has made rapid technological strides during the last 25 years. During the last 10 years, "performance" became the keynote—in other words, "What did the product do in service," and not "What were its chemical and physical properties, what crude did it come from, how was it processed, etc." Thus, while aviation oils, heavy-duty detergent oils, multi-purpose gear oils, greases, etc., had to have certain chemical and physical properties to insure satisfactory operation under extremes of weather and service, they were also required to meet actual service tests in order to prove their performance. No longer were products judged satisfactory on the basis of old test methods, many of which had long since lost their significance. "The proof of the pudding is in the eating" and now products had to "do" before they were accepted.

Outdated Specifications

The trend was shown by A. J. Holm, Purchasing Agent of the City of Los Angeles, in his "Diesel and Gasoline Engine Lubricants," presented before the National Institute of Governmental Purchasing in 1949.

This emphasis on performance is not surprising because, with the manufacture of petroleum products from various crudes by many different methods, physical and chemical specifications were no longer adequate even though they were earlier an index of uniformity since the products all came from the same or similar sources and were manufactured more or less the same way. As a matter of fact, the use of test limits, considered adequate when written, could result in obtaining inferior products for present-day requirements. Cooperative research efforts of the industry and of government groups showed the older "properties" approval methods in many cases would not insure performance and, worse still, might actually rule out superior products. And so, as it should be, performance became king—but many municipal specifications did not keep abreast of these new developments. Some cities were unable to buy the products which perform better because their specifications would not permit their use. Further-

Suggested Simplified Specifications

Diesel Fuel

ASTM Designation D975 of current issue. No. 1D and 2D types are now generally available. Type of engines in use and operating conditions determine the grade required.

Fuel Oils

ASTM D396 of current issue. All grades of fuel oils are covered in this specification and the grade to be purchased can be selected on the basis of the local requirement. This specification is identical to Commercial Standards Specification CS12-48 for Fuel Oils and either this designation or ASTM designation could be used.

Motor Oils

1. For premium-type oils use SAE crank-case-oil classification limits for viscosity, other physical tests as desired. Specify that oil should pass CRC Designation L-4 engine-test procedure for determining oxidation characteristics of heavy-duty crank-case oils with the following ratings:

   Piston Varnish, 8.5 Minimum
   Over-all Engine Cleanliness, 85, Minimum
   Max. Bearing Wgt. Loss, 300 Milligrams

2. For heavy-duty-type oils for both gasoline and diesel engines. Military Specification MIL-O-2104. This supplants U. S. Army Specification 2-104B and is the oil now being recommended by most heavy-duty-engine manufacturers.

   For the sake of simplification and best lubrication results, use of MIL-O-2104 oils in all automotive equipment is recommended. Many passenger-car manufacturers are recommending H. D. oils.

NOTE that these suggestions are quite general, make no attempt to restrict products by close, unreasonable limits, and that all of the tests and most of the limits are those already adopted by authoritative sources, certainly disinterested as far as your particular problems are concerned.

more, they were seriously limited in reaching a cross-section of bidders because the new products had become standard items and to meet the old specifications would have required the manufacture of special products, which was hardly of interest to most suppliers.

Get 'Em Up to Date

Bring your specifications up to date and use multi-purpose products where possible. This will make your buying easier and will reduce the number of products you must handle. For example, one grease of the multi-purpose type will actually take the place of four or five other greases designed for specific individual applications. Then, too, if your motor-oil requirements predominate, and your service is largely heavy duty, select one heavy-duty MIL-O-2104 oil and, for simplicity, use it in those few remaining applications which may not require such high performance. Your supplier will assist you and advise on applications which do not permit such heavy-duty oils, multi-purpose greases, and so forth. The initial cost of these multi-purpose products may be slightly higher, but the savings in handling and insurance against errors will easily offset this small additional expense.

As illustrative of what's gone on before, let us look now at some current specifications which are in need of change, what's wrong with them, and how they may be corrected.

Motor Oils

Some states require that the additives used in motor oils be approved by some authority, usually the state engineers. The selection of additives to do a job depends on a great deal of knowledge of base stocks and the proper matching of the additives. In order to judge whether an additive is suitable, the purchasing group would require knowledge and facilities equivalent to those of the entire petroleum industry. The product is bought for what it will do, not for what it contains; therefore, specifying additives is dangerous and can lead to serious trouble if the complementary oil stocks are not compatible with the additives specified.

Many preferred and well-proved additives are on the "acid side," yet very low acid numbers are specified. This will rule out some excellent additives. Certain superior base stocks have higher acid numbers than others of an inferior grade. Acid (neutralization) numbers are now considered meaningless as far as predicting performance and should, therefore, be dropped or certainly, by all means, de-emphasized —as far as quality is concerned—in specifications. This test is a carry-over from the control tests used in acid-treating refining methods, now rapidly becoming obsolete.

Many specifications read "the oil shall contain no other material not derived from petroleum." This rules out the use of additives and prevents your supplier from furnishing high-quality oils which need these additives to do their best job. In the past, this was necessary to keep abrasives out of your equipment, and there are instances now where non-additive oils are required—though infrequent. But treat these as separate and distinct requirements. Do not let your specifications exclude you from the use of products where additives really are necessary to give maximum performance.

To state that the oil should be made from Pennsylvania, mid-continent, or coastal type crudes is a very restricting and discriminating specification. It is like specifying shirts or sheets made from cotton grown only in Mexico. As stated earlier, present refining techniques and product evaluation have demonstrated over and over again that good motor oils can be made from all types of crude oil.

Narrow viscosity-limits for each SAE grade seem to be quite prevalent in many specifications. Such narrow limits make it necessary for many refiners to prepare special blends. Engines are not sensitive to small changes in oil viscosity. The use of the SAE crankcase oil viscosity limits is entirely satisfactory. These limits permit all refiners to submit their established brand specifications for each SAE grade. Attention is called to the new SAE crankcase oil classification limits adopted in October 1950, and which become mandatory in April 1952. All refiners will be using the new limits soon and appropriate changes should be made in purchase specifications prior to this date.

Greases

One state highway commission has a specification for pressure-gun grease which calls for worked consistency of 290-320. Practically all grease manufacturers follow the National Lubricating Grease Institute (N.L.G.I.) consistency classification:

No. 0	355-385
No. 1	310-340
No. 2	265-295
No. 3	220-250
No. 4	175-205
No. 5	130-160

The Commission's specification does not fall into the N.L.G.I. grades. Consequently, most bidders would have to make a special grease. The requirements for pressure-gun grease is generally No. 0 in winter and No. 1 in summer, and N.L.G.I. consistencies are recognized as being entirely adequate.

One state has a water-pump grease specification calling for 60-80 penetration. This is entirely too hard and will not give as good lubrication as No. 4 (175-205). Another has a No. 5 consistency requirement.

A wheel-bearing grease of 185-235 consistency is specified by another state. This straddles No. 3 and No. 4 consistencies and would require special manufacture. In addition, this grease would be considered too hard for grease wheel-bearing lubrication where No. 2 is recommended.

A viscosity index of 90 minimum for oil used in grease is called for by another government agency. This would restrict the use of available products. Most greases use medium- or low-viscosity-index oils because of better compatibility with metallic soaps, resulting in more stable greases.

Gear Oils

Several states have transmission-oil specifications which call for viscosity at 210° F. of 180-210 seconds. The SAE viscosity-grade limits for SAE 140 are 120-200 seconds at 210, and for SAE 250, a minimum of 200 seconds at 210° F. These state specifications as written would allow both SAE 140 and SAE 250 to be furnished. As SAE 250 is no longer specified by any transmission manufacturer there is a strong possibility that the state would be getting an oil heavier than recommended. Most SAE 140 oils fall between 150-170, which is a better viscosity range from the standpoint of good lubrication. Furthermore, this allows refiners to use straight bright stock and guards against the addition of residual materials to increase viscosity.

Several states specify that extreme-pressure additives contain sulfur and chlorine. This is a restrictive specification because there are other very satisfactory types of E. P. additives which do not contain chlorine.

The foregoing illustrates the specifications in need of change, what is wrong with them, and how they may be corrected. In regard to your own, you can get all the help you need in the way of interpretation and rewriting from your own petroleum-products supplier. It perhaps isn't necessary to say this, but if you can't, then see other suppliers because every reputable one known to the industry is glad to provide such services to government purchasers. All are members of the American Petroleum Institute, the Society of Automotive Engineers, the National Lubricating Grease Institute, the American Society for Testing Materials, and many other organizations.

From a paper presented at the 1951 Conference of the National Institute of Government Purchasing.

A Plastic Pipe

Water System

Pax, W. Va., breaks precedent and builds most of its new water-distribution system of plastic pipe, thereby avoiding construction and future maintenance difficulties created by rocky soil

By DENNIS M. LEARY, Jr.
Consulting Engineer
Beckley, W. Va.

Exact line and grade were not necessary with this flexible plastic pipe.

SINCE its incorporation in 1910, the City of Pax, a small coal-mining town lying in the Paint Creek Valley on a direct water-level route from Beckley to Charleston, W. Va., has been tormented by "water worries." Equally affected were the adjacent unincorporated villages of Long Branch, to the west, and Wierwood, to the east. Total population of the communities is approximately 1,400.

Pax formerly was provided with water from individually owned wells and, in a few cases, springs. High in iron and sulphur content, this supply left much to be desired in potability. And the community had no common reserve supply for emergencies such as fire—a constant threat in coal-mining regions.

A few years ago, the Pax Pure Water Company, a private concern, took the first step toward improvement of the community's water needs. This firm acquired a suitable well in Long Branch, one mile west of Pax, installed a filter plant and pumping station, and laid metal pipe for a small distribution system. Forty of the area's 374 homes, averaging four persons per unit, promptly took advantage of this service.

It was obvious that the existing water system was a step in the right direction, but inadequate for 100% community service. Consequently, toward the end of 1950, Mayor Frank Wriston and the Pax City Council asked the writer to survey Pax's water potential and make a formal recommendation for a new, practical water works.

Pax is nestled in a small basin-like hollow, entirely surrounded by steep hills. The terrain is so rugged that a surface survey was too time-consuming. No suitable map of the town or the topography was available. Hence, we ordered an aerial photograph of the area. This was prepared by the Bollinger Aerial Survey Company, of Charleston, W. Va.

The report included the following recommendations:

1. The existing 6-inch cased well was an adequate groundwater source, already approved by the West Virginia State Health Department.

2. Capacity of the existing filter system was deemed adequate for fire protection. It would be necessary, however, to install an additional well pump and another distribution pump (each 50 gallons per minute) to comply with fire regulations. An arrangement could be made to by-pass the filter and pump directly into the distribution system from the chlorinated well supply in time of emergency.

3. With renovation of the existing filter plant and pumping station, the addition of 33,130 lineal feet of new pipelines, installation of 10 fire plugs, and the erection of a new 100,000-gallon storage tank on a hill north of Pax, the community's water problems would be solved.

Estimated cost for purchase of the existing water plant, plus all new work and equipment necessary to complete

Special, hard plastic adapters, threaded at one end, make the connections. The adapter's free end is squeezed into pipe and locked with a freeze-type coupling.

the project, was approximately $130,000.

Selection of pipe for this unusual terrain presented a big problem. Five per cent of the soil content is solid rock. Straight trenching is practically impossible because of large boulders. Furthermore, the sulphur-bearing shale and sandstone formation is high in acid content. Ordinary metal pipe disintegrates here in about three years.

In view of these special problems, plastic pipe and fittings appeared best for most of the new network. Plastic pipe was used for all mains whose maximum size was 2 inches. The base mains, of 6-inch minimum, are of asbestos cement.

Plastic pipe, which is highly flexible, can be "snaked" around boulders and other obstructions at will. The pipe is light, easy to handle, and is corrosion-proof. It can be jointed to metal or plastic.

According to the Yardley Plastics Company, Columbus, Ohio, manufacturer of the pipe, Pax is the first municipality in the United States to use plastic pipe in a city water-supply and distribution system.

Pax officials approved recommendation at the outset of 1951. The project is being financed by revenue bonds amounting to $130,000. Construction started August 1 and was completed in November 1951.

There is a 230-foot elevation differential between the highest and lowest points in the three-mile system. It was necessary to cross under the Virginian Railroad tracks at three different places. Trench lines encircle the basin, run down the hills, and feed out across the valley floor.

Despite these seeming obstacles, work has proceeded at a rapid clip. The speed with which the crews laid the plastic pipe exceeded all expectations. A few men, working behind a small trencher, were able to install the pipe and fill in the 30-inch-deep trenches faster than the machine could dig—even on those rare occasions when tillable soil was encountered.

But the biggest gratification to all concerned, is that Pax—after nearly a half century—has at last overcome its water difficulties.

Flies Don't Like Grandfield, Okla.

By F. G. PATTERSON
City Manager
Grandfield, Okla.

GRANDFIELD has a welcome sign out for all good citizens, and a "Keep Out" sign for undesirables. Flies and other insect pests are among them. Today, because of certain municipal policies in Grandfield, you will find fewer flies and mosquitoes here than in any other town in Oklahoma. Our people have become so used to having no flies that they start raising the roof if a few land on their screen doors.

The chief patrolman that we use to suggest to these insects that life beyond our city limits would be more pleasant and healthful is an Iron Age mist sprayer. We purchased it last year after an exhaustive study of the merits of all various types available to us.

The economy of the machine attracted us. As an illustration, before we bought this mist sprayer, we employed a government spray truck, and every spraying cost us more than $300.

Today we do the same work for one-third less. Usually we use 5 gallons of DDT and 3 gallons of chlordane to 125 gallons of water. Using No. 12 spray nozzles in the machine, we require approximately four hours to empty the tank with a tractor traveling at a speed of four miles per hour. We can cover a swath of about 100 feet, but, with a wind, this swath is easily doubled. We spray property both ways from the alley, and from the side as well as front streets, which gives us a complete coverage on our blocks. The blocks measure 300 by 300 feet.

I rather imagine most readers are interested in how we pay for this instead of how we do it. Before we bought the machine, we changed our ordinance to provide for a monthly 25-cent charge to all water users.

Prior to the passage of this ordinance, we found it necessary to pass the hat around. Some would give as much as $10 and others who received as much benefit contributed nothing. It's a pretty hard matter to pass the hat three times a year without making yourself a nuisance, so with the monthly charge there has been no dissension.

We have been getting better results as a whole from the spraying. We like to spray the town four times during the spring, summer, and fall. Whenever we feel flies are building up immunity to DDT we add other chemicals and give them a surprise. It seems almost unbelievable that any town could be as free of flies as this one is today.

Last spring this section had an epidemic of "greenbugs" in the wheat, and we had difficulty persuading anyone to let us use the mist sprayer in their fields. At last we convinced a member of our commission. He told us later that by using the same chemical in the sprayer that is usually applied by airplane he got a 100% kill at a cost of 25% of the airplane application.

In addition to our spraying, we keep harping on the advisability of wrapping garbage thrown in the trash barrels to prevent flies from breeding there. The residents are responding splendidly. In addition to spraying our own town, we send the machine to near-by towns, going as far south as Bowie, Texas.

I cannot see how any city official anywhere can turn his back on city-wide insect spraying. I would pay $10 per month just to have my property free of flies and mosquitoes, not to mention free of the health hazards the insects present.

Areas in and around Grandfield are freed from insect nuisances by this sprayer.

Wiser Control of *Juveniles*

A research report, initiated by St. Louis police, that is bringing action

CRIME prevention is certainly as important a municipal function as fire prevention and disease prevention. They are all of a piece in attacking the reasons instead of having to fight the symptoms. The first growths of crime are the delinquents. THE AMERICAN CITY for September 1951 presented a condensed version of a report on better ways to handle delinquency, made by the Governmental Research Institute at the request of the St. Louis Department of Police. Through the courtesy of Acting Chief of Police James E. Casey, it is now possible to report the implementation of the 15 specific recommendations. Both the recommendations and the actions taken should be of great value to municipalities over the nation.

1. The long-term conduct supervision now provided by the Division should be curtailed and juveniles should more frequently be referred to the various community-service agencies for such supervision.

   Will do. The directory of social agencies and their services has been checked for agencies the police can use.

2. The Department should confer with officials of the Juvenile Court and thereafter establish uniform policies as to which types of juvenile cases should be referred to the Juvenile Court and which should be dealt with directly by the Crime Prevention Division.

   A list of offenses that are severe enough to warrant immediate referral of juveniles to court has been compiled (and shown here) by Judge James T. Nangle, of Circuit Court, and James Connor, Director, Crime Commission, St. Louis.

3. The Police Department should employ a qualified social worker as consultant to aid the Crime Prevention Division establish the proposed referral program.

   The Department employed Dr. Walter B. Bodenhafer, of Washington University, and Dr. C. S. Mihanovich, of St. Louis University.

4. A permanent community committee for the prevention of juvenile delinquency should serve the Police Department in an advisory capacity.

   The committee has been appointed.

5. While the athletic leagues sponsored

Offenses Warranting Immediate Referral of Juveniles to Court

1. Adultery; prostitution; open and notorious promiscuity; gross lewdness and lascivious behavior
2. Animals: administering poison to; killing, wounding, torturing
3. Arson: all forms thereof including attempts
4. Assaults:
   - With malice—
     - With intent to kill
     - With intent to maim
     - With intent to ravish
     - With intent to rob
     - In attempt burglary
     - In attempt other felonies
     - In resisting execution of legal process
   - Without malice—
     - With intent to do great bodily harm
     - With intent to commit robbery
     - With intent to rape
     - With intent to commit burglary
     - With intent to commit manslaughter
     - With intent to commit other felonies
     - Common assaults and affrays when committed gang style
5. Bribery: accepting a bribe when a witness on agreement not to testify or to absent self from jurisdiction
6. Burglary, all forms thereof, including possession of burglary tools
7. Child abandonment: abandoning any child under six years of age regardless of whether or not the child was born in wedlock
8. Destruction of property—
   - Telegraph and telephone lines
   - Mile post and guide boards
   - Courthouses and other county buildings
   - Deliberately setting fire to woods
   - School or church property
   - Dwelling houses (if damages extensive)
9. Disturbing religious assembly and desecration of U. S. flag
10. Embezzlement (in the sum of $10 or over)
11. Escaping from confinement or aiding others to escape
12. False fire alarm
13. Forgery: all degrees thereof including the passing of counterfeit money
14. Frauds or false pretenses
    - Where the sum obtained is $10 or over
    - Any use of slugs or devices other than lawful U. S. coin
15. Gambling
    - Selling lottery tickets
    - Betting on gambling devices
    - Custodian of a horse bet
16. Incest
17. Kidnapping, including enticing away a child
18. Larceny in the amount of $10 or over
    - Any larceny from a person or dwelling house regardless of amount taken
19. Maiming by procurement of another (felonious wounding)
20. Mayhem
21. Misusing burial grounds
22. Molesting a child
23. Motor vehicles
    - Larceny of motor vehicles or equipment over $30
    - Driving or operating without owner's permission
    - Leaving scene of accident
    - Driving while intoxicated
24. Murder, all degrees including manslaughter and infanticide
25. Narcotics, drugs and marijuana, use of
26. Obscene matter, circulating same
27. Perjury and its subornation
28. Poisoning, administering same
29. Rape (both statutory and forcible)
30. Railroads (obstructing track and endangering life of passengers)
31. Receiving stolen property of the value of $10 and over
32. Robbery: all degrees of same including blackmail and extortion (robbery third degree)
33. Shooting into dwelling house, engine cab or passenger coach
34. Sodomy
35. Stink bombs, exploding same
36. Threatening letters
37. Weapons, carrying concealed
38. Vagrants

by the Division should not be abandoned, other agencies should do the coaching now provided by police officers. Juvenile officers should not actually conduct the athletic programs.

Dr. Bodenhafer and Dr. Mihanovich will carry out this recommendation.

6. Work of the juvenile officers in four less-busy districts should be consolidated.

The Department has consolidated facilities in the First, Second, and Seventh Districts and will in the north districts.

7. The Commander of the Crime Prevention Division should prepare, from time to time, brief statements of activities and procedures for all officers and policewomen of the Division.

A manual for crime-prevention officers will be prepared and changes in instruction and policy will be added. The Police Manual is being revised and will contain instructions to the Crime Prevention Division.

8. Juvenile officers should wear civilian clothes when making home or school visits.

The officers will be granted permission to be in civilian clothes when making home or school visits.

9. More policewomen now on patrol duty should be assigned to regular duty during the late afternoon and evening.

Seven policewomen have been added and 23 more are requested in pending legislation.

10. Policewomen should be made police officers and improvements should be made in the entrance requirements for the position of policewoman.

Attorney General's ruling permits having policewomen with full powers. Candidates for the job of policewoman, and the seven policewomen mentioned, completed 12 weeks' training October 5, 1951.

11. Policewomen should be used in interviewing females involved in sex incidents.

This will be done, with instructions in revised Manual.

12. A special in-service training course covering child behavior should be provided for all personnel of the Division.

Course was given to all crime-prevention officers and personnel the week of July 9, 1951.

13. When a juvenile is placed in the district detention quarters a record of this fact should be made.

Policy of not locking up juveniles has been adopted and Manual will carry this instruction.

14. A records system should be established to provide the Police Department and the community with a more adequate picture of the juvenile problem.

15. Internal records of the crime-prevention offices should be established on an individual juvenile basis instead of the present incident basis. The supervision card, now widely used by the Division, should be replaced by a case history and supervision form.

The new form to provide for record of juvenile apprehension and case record is shown.

Four Conclusions as to Urgent Municipal Trends

By HENRY BRUERE *
President, National Municipal League
and
Chairman of the Board
Bowery Savings Bank of New York

FIRST, before we destroy our municipal credit by swollen budgets and excessive taxation, we should have a national study of the whole question of the means of raising public revenues and their appropriate distribution. Without representation, taxation has long ago been put down as intolerable. But without relation to specific needs in proper proportion, the high level of taxation we are now bearing leads to extravagance, inflation, and a general lowering of the tone of government. Just because, whether wisely or not, we have come to use the power to tax as a measure of social regulation, such as the liquor tax and the inheritance and estate taxes, we must not slip into the dangerous conclusion that all taxation is beneficial as a means of offsetting inflation or for other reasons. For the most part, the taxes we pay can only be justified by the public good the spending of the resulting revenues produces.

SECOND, we cannot leave to haphazard attempts at solution the great problem of rebuilding and reshaping our cities, so that they may accord with modern standards of decent living and free us from conditions such as the ever-increasing abomination of traffic and parking congestion, to mention only one item. We must have a well-considered plan and a program based on it, which, if followed, will give us cities where we can live in comfort and decency on our average incomes.

THIRD, this is the time to establish new standards in the civil service, as recent exposures have so abundantly shown. The undeveloped abilities of our civil servants are one of the nation's greatest available resources for improvement in government administration and for civic betterment. Our hope lies not in finding one man to work miracles, but in the thousands who have chosen public service as a means of livelihood and who need only leadership and incentive to make it the highest vocation.

FINALLY, do we not need more unselfish civic leadership from successful men and women who are willing to devote as much of their time to public problems as they do to their golf or their gardens or their stamp collections?

I do not refer solely to unselfish service in Washington or overseas, for which we are so greatly indebted, but especially I have in mind attempts to find solutions for problems that we need to solve in cities and states if American community living is to be as up to date, let us say, as our motor cars, refrigerators, and television sets. In all these fields of effort there is need not only of skilled and devoted professionals but of the amateur called to a specific public task, from which he or she may obtain great satisfaction and deserved honor.

* Concluding paragraphs from Mr. Bruere's presidential address at the National Conference on Government, in Cincinnati, Ohio, November 26, 1951.

Tax Collections in 1950

TOTAL tax collections in 1950 is the subject of a recent report of the Tax Institute, published in *Tax Policy*.* The report helps to make clear why it is, despite the fact that total tax collections reached a new high of $56,800,000,000 in 1950, many local governments are still so hard-pressed financially, and are caught in the inflationary squeeze.

Exclusive of payroll taxes for unemployment insurance and old-age benefits, the Federal Government collected $36,989,000,000 in 1950, the state governments, $7,912,000,000 and local governments, $7,998,000,000.

This compares with the following figures for selected earlier years (in billions):

Year	*Federal*	*State*	*Local*	*Total*
1916	$.731	$.364	$2.045	$3.140
1922	3.621	.947	3.158	7.726
1932	1.891	1.851	4.716	8.458
1942	11.845	3.903	4.624	20.372

Percentage-wise, local governments collected 65.14% of total tax collections in 1916, compared to respective federal and state figures of 23.27 and 11.59. In 1950, the situation was greatly changed, with 69.92% of tax collections by the Federal Government; 14.96% by state governments, and only 15.12% by local governments.

*Published by the Tax Institute at 457 Nassau St., Princeton, N. J. Single copies, 25 cents.

Some Elements of Street Construction and Maintenance

Curb-and-gutter paving, curb openings, catch-basins, rail removal, and paving-assessment policies

Part V (Conclusion)

By WILLIAM S. FOSTER
Engineering Editor
The American City

EVERY street-paving improvement has a host of features that do not loom particularly large when considering the entire project, but nevertheless must be performed well to insure success of the entire work. Some of these include curb-and-gutter construction, catch-basins, sidewalks, the removal of old streetcar rails, and a fair method of assessing costs to pay for the work. This final installment will attempt to bring to light good practice in these phases of street improvements.

A curb-and-gutter section separate from the paving slab is frequently used to strengthen the so-called "low-cost" paving surfaces, such as soil-cement, stabilized gravel, etc. This represents good practice since the edge of such pavement is its most vulnerable point.

J. W. Barney, City Manager of Hillsboro, Ore., recommends a 16-inch curb when using a curb without the gutter apron. This curb should have an 8-inch base and a 6-inch top, and should be 6 inches from the top of the curb to the top of the pavement. When using a combined curb-and-gutter, he recommends 24 inches from the back of the curb to the edge of the gutter.[1]

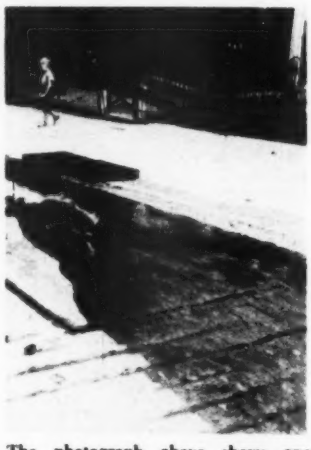
The control of driveways can be troublesome. Many business houses like long driveway openings in the curb to insure easy access of cars and trucks. Some ask for driveway openings because they keep people from parking in front of their places of business. The control of the openings requires much tact and diplomacy on the part of city officials in order that the general public may be served.

Driveway Construction

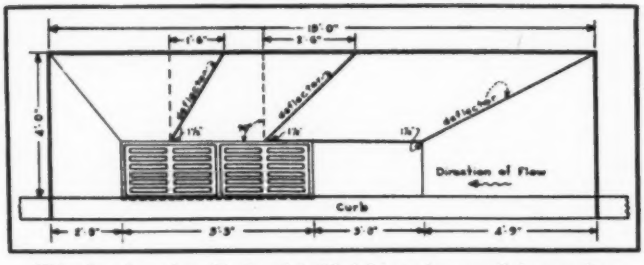
Wichita, Kans., has passed an ordinance that specifies how driveways may be constructed. It limits the driveway width to 30 feet as measured along the outside sidewalk line. On streets designated as state or federal highways, this width may be increased to 40 feet. If a single parcel of land requires two driveways, there must be at least one curb parking space between the driveway approaches. The ordinance limits the curb cut to 52 feet. It prohibits construction of a driveway approach, except curb return, less than 18 feet from a corner or within 2 feet of the property line extended. It limits the radius of curvature of the curb return to a distance not to exceed the distance between the curb and the outside sidewalk line. If a driveway interferes with street-lighting poles, traffic-signal standards, catch-basins, hydrants, or other facilities, the property owner must relocate these facilities at his own expense.[2]

Curb-and-gutter work moved out of the realm of hand work and into machine production in Kalamazoo, Mich., where a curb-and-gutter paver was first used. This lays curb at 5 to 8 feet per

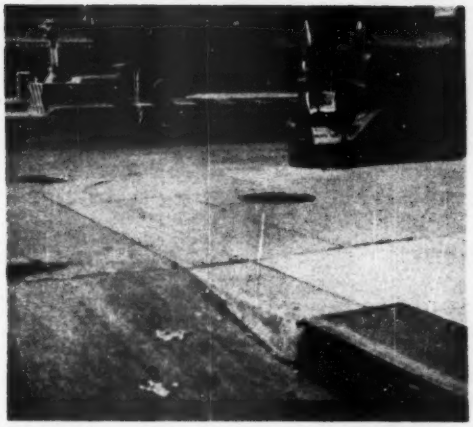
These three gratings showed good water-receiving characteristics in the University of Minnesota tests. The diagonal bars on the two lower gratings gave them self-cleaning characteristics.



The photograph above shows one of Cincinnati's inlets in operation.



This plan shows how Cincinnati builds inlets to increase their capacity.



Wichita, Kans., prefers to eliminate the curb height at its busy intersections (above); and Dearborn, Mich., finds that extending its sidewalks through the curb is a very satisfactory way of preventing curb breakage.

second at half the estimated cost of ordinary methods. The machine was built in the Kalamazoo Public Works yards.[3]

Bay City, Mich., also has adopted the use of curb-and-gutter pavers to speed this type of construction. The city uses a Dotmar Paver. It requires only one finisher, can work in bad weather, and runs on portable wood forms that key into the steel forms. It works best on straight sections, but can be used on moderate curves, although not on street-corner or driveway curves. When it approaches an intersection, it must be moved across by a special steel frame and hoist placed in a truck-dump body.

Bay City officials estimate that it increases production 15% to 20%. The city paves an average of five miles of curb-and-gutter per year.[4]

Sidewalks present one annoying maintenance problem. Since contraction cracks in them are rarely sealed as they are in the streets, they get filled with dirt in the winter when the cold opens them. In the summer they expand and, over a period of years, push against the curb, often breaking it. Dearborn, Mich., overcame this difficulty by notching the curb to receive the sidewalk.

At crosswalks in busy areas, some cities build curbs that will not cause a problem for those who have trouble stepping from the curb to the street. Wichita, Kans., for example, raises the street elevation to curb height at the street corner. Kalamazoo, Mich., builds sidewalk "ramps."

Catch-Basins

Good street drainage means catch-basins designed so that the water gets away quickly. In general, the catch-basins are constructed of bars cast parallel to the pavement center line. However, studies at the St. Anthony Falls Hydraulic Laboratory at the University of Minnesota disclosed that inlet bars set at a 45° angle with the center line can give good results also.

The studies centered around three types of inlet that showed superior characteristics. One has ten 1¼-inch-wide openings, each 13¾ inches long; its over-all dimension is 16 by 24 inches. The second has nine openings, also 1¼ inches wide. The openings vary in length from 4 to 18.4 inches; the over-all dimension is also 16 by 24 inches. The third has six openings, each 1⅝ inches wide. The length of the openings varies from 8 to 26 inches; the over-all dimension is 24 by 24 inches.

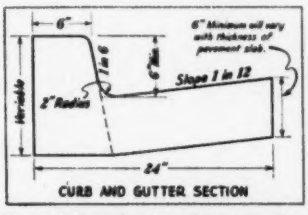
Tests showed that the capacity of a grate inlet can be doubled by allowing between 8% and 15% of the gutter-flow to pass by the inlet. This amounts to 0.10 to 0.20 cubic feet per second per inlet. Greater carry-overs yield smaller returns.

The capacity of a grate inlet in a given gutter is determined mainly by its width normal to the flow and by the efficiency of its openings. The latter depends largely on the effective length of the openings in the direction of flow. The capacity of an inlet with diagonal bars can be increased substantially by rounding the top surface of each bar to the approximate form of a free over-fall.

For conventional types of inlets, curb openings are of little or no value in increasing inlet capacity unless capacity is provided by ponding. For inlets having diagonal bars, curb openings facilitate self-cleaning of the inlet bars and may increase inlet capacity.[5]

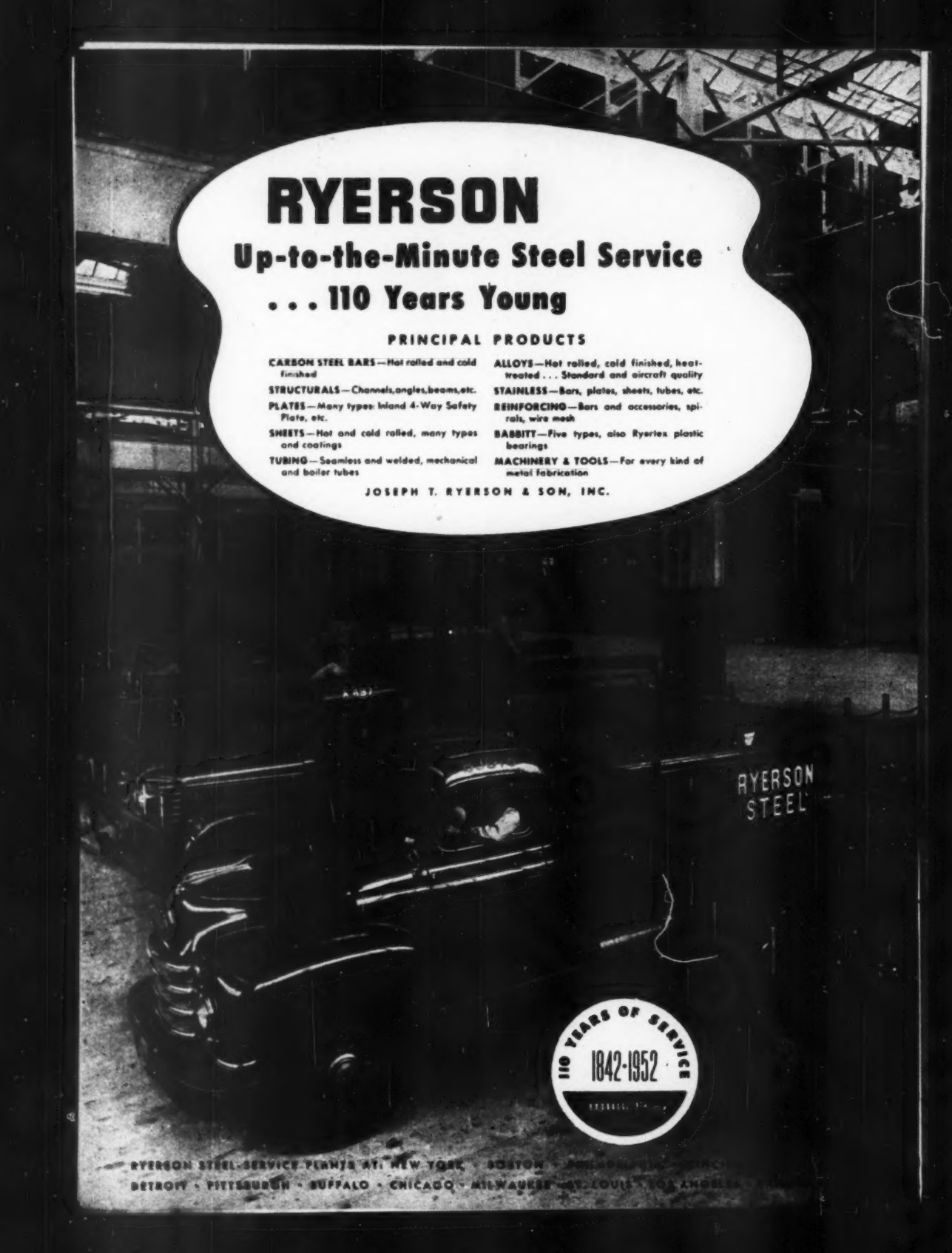
Cincinnati has been able to increase the capacity of its street inlets greatly by the use of "deflectors." These are ½-inch steps in the concrete designed to direct the water toward the inlet. The research was conducted by Carl Siegrist, Assistant Engineer, and A. B. Backherms, Principal Engineer, in the

(*Continued on page* 175)



Typical of good curb-and-gutter-section design is this one—in Hillsboro, Ore.

The Kalamazoo sidewalk ramp makes the curb easy to negotiate.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What a Helicopter Can Do For a Police Department

THREE Bell helicopters were purchased by the New York City Police Department in 1950 to replace another two years old. Rodman Wanamaker, aviation aide to the Police Commissioner, explained why: "One helicopter so completely proved its value that the New York Police Department decided to expand their use in police work. Our three helicopters assist in our patrol and emergency work and traffic assignments. This aircraft can fly in weather which ordinarily grounds most fixed-wing airplanes."

During its two years of service, the Bell helicopter logged more than 300 hours and rescued at least 12 persons from the quicksand off Howard Beach in Jamaica Bay, one of whom had sunk to his neck. On another occasion, a half-frozen pilot was pulled from the pontoon of his overturned airplane in the icy waters of the bay.

When a motorboat got out of control in Rockaway Inlet, tossed out its occupants, and churned wildly among nearby craft, a patrolman dropped aboard from the pursuing helicopter and brought it under control. On March 11, after an all-night search for a Brooklyn, N. Y., 16-year-old boy whose motorboat was blown ashore in marshy Jamaica Bay, he was spotted by a police helicopter and taken aboard. This service has searched rooftops, brushland, and barges, and landed on wrecked ships looking for prisoners escaped from Rikers' Island, with capture facilitated because the men were prevented by the searching helicopter from getting away from the area. Though New York is the only metropolitan community in the world to use helicopters, the method is too good to remain exclusive.

History of Service

Captain Gustav Crawford, of the Police Aviation Bureau, points out that New York City has had experience with this service for 22 years. It was established on October 24, 1929, as a unit of the Emergency Service Division. Its duties are the same as those of any patrolman: preserve the peace, protect life and property, prevent crime, enforce all laws, detect and arrest all violators of law. The value of a police air force was demonstrated within a year when members of the unit flew to Cape Cod Canal and took from a tugboat its captain who was wanted for manslaughter.

Prior to placing the first helicopter in service, members of the Aviation Bureau were assigned to the Bell Laboratory at Niagara Falls, N. Y., where they received intensive training and instruction as helicopter pilots. Other members received helicopter mechanical training.

The Police Aviation Bureau performs many duties in cooperation with federal, state and city departments, says Captain Crawford, some of which are given below.

Captain Gustav Crawford, at the left, head of the New York City Police Department Aviation Bureau, is greeted by Lawrence D. Bell, president of the Bell Aircraft Corporation, at the Bell factory. Captain Crawford accepted delivery of three Bell-47D1 helicopters to be used in Police Department work.

1. Civil Aeronautics Authority and Board by reporting low and acrobatic flying, airplane crashes, forced landings, etc.
2. Department of Marine & Aviation by enforcing regulations concerning airports, seaplane bases, and landing sites within their jurisdiction.
3. Department of Parks by enforcing rules concerning low flying over parks, city beaches, etc., and landings by aircraft on Park Department property, by obtaining court process and prosecuting offenders.
4. Department of Health and Borough President offices by aerial dusting of marsh lands and swamp areas in cooperation with mosquito-control and malaria-prevention program.
5. Department of Correction—aerial photography of prison sites and buildings, searches for escaped prisoners.
6. U. S. Navy and Coast Guard by cooperation in air-sea rescue work, escorts.
7. Board of Estimate, Bureau of Real Estate, by aerial photography of land sites subject to litigation, school sites, areas selected for public improvement.
8. Department of Sanitation—aerial photography of sites and surrounding areas to determine selection as public dump.
9. Other units of Police Department: Detective Division, by transporting fugitives from justice being brought back to this city for trial; detectives on official business. Traffic Division, by aerial traffic-flow survey and observation to determine points of vehicular congestion, detours to lessen congestion.
10. Fire Department—aerial mapping of fire zones and of large fires.
11. Transporting police officials on official business.
12. Emergency Service Squads, Harbor Precincts Patrol boats, etc., when emergencies require.

New Civil Defense Films

By WARREN CHENEY, *Chairman*
Training and Training Aids Section
Civil Defense Research Associates, Inc.
New York, N. Y.

EVALUATIONS of the following recent civil-defense films are based on previews conducted by the Training and Training Aids Section of Civil Defense Research Associates, Inc. They supplement the review and film listings published in the May and June 1951 issues of THE AMERICAN CITY, reprints of which are available from the Editorial Department without charge.

A VOICE SHALL BE HEARD. 1951. 21 min. For loan at 14 General Electric Film Libraries (addresses listed below); for purchase write to Mr. Roy Jordan, Gov't and Commercial Dept., Electronics Div., Electronics Park, General Electric, Syracuse, N. Y.; price $35. Made for GE by the March of Time, this film features use of portable and mobile 2-way radio in a civil-defense activity. Syracuse CD officials supervised the script and filming, which shows how CD field units meeting with atomic-blast conditions keep in contact with the city's central control room. Sequence showing the controllers in full swing gives an excellent and revealing picture of how a modern CD headquarters in the U. S. would operate in response to an air attack.

YOU NEVER CAN TELL. 1951. 27 min. For loan from Navy Film Libraries as MN 6947. Made by the Navy Photographic Center, the picture is concerned with security problems within an industrial plant. It illustrates many of the mistakes of laxity and carelessness that promote leaks in classified information including the machinist who describes the nature of the new part he is making to an outsider, the part being a key section of a secret weapon. There is the careless executive who goes out to lunch without locking classified blueprints in his safe and the lax office manager who hasn't bothered to change the combination on the safe for ten years, thereby allowing too many people to know the combination. This film is excellent for showing in all plants where security is important.

MEDICAL ASPECTS OF NUCLEAR RADIATION. 1951. 20 min., color. For loan at Army Film Libraries as MISC 7897; for loan and purchase from Castle Film Libraries and many A-V dealers. Made for the Armed Forces Special Weapons Project by Cascade Films, Hollywood, Calif., this picture is aimed at lay audiences rather than the medical profession. Through use of both live action and animation sequences it shows what nuclear radiation is and how the nuclear damage of atomic weapons affects the human body. The film is an important companion to the previously released AFSWP films, *Effects of an Atomic Bomb Explosion* and *Self-Preservation in an Atomic Bomb Attack*, and provides excellent indoctrination for all types of CD audiences.

MODERN MINUTE MEN. 1951. 29 min. For loan from the Ohio Bell Telephone Co., Mr. J. D. Moorhead, Film Mgr., 750 Huron Rd., Cleveland 15, Ohio. Made by Wilding Pictures for Ohio Bell, the picture features the role played by the telephone in CD communications. Civil-defense activities shown deal mainly with wardens' duties in fire-fighting and rescue and first aid on the block level. Film is useful as a general introduction to some phases of CD work.

WHAT YOU SHOULD KNOW ABOUT BIOLOGICAL WARFARE. 1951. 9 min. For loan or purchase from Castle Film Libraries and many A-V dealers. This is the most recent release in the Federal Civil Defense Administration series of one-reel public-information films produced by Reid H. Ray Film Industries of St. Paul. Based on the FCDA booklet of the same title, the picture is concerned with some of the more obvious ways in which the family would proceed if biological warfare were to be introduced. Useful as a means of introducing a lecture session on BW.

DISASTER ON MAIN STREET. 1951. 9 min. For loan or purchase from Castle Film Libraries and many A-V dealers. An FCDA one-reeler made by United World Films, this is a very effective, dynamic picture built around the documentary evidence of what attack from the air did to the Main Streets of European and Japanese cities during World War II. The narration skillfully and forcefully brings home the fact that American cities will be blasted, burned, and torn in no less terrible fashion comes World War III, and that survival is directly proportionate to the CD preparedness and protection techniques established by civilian populations. This is probably the best CD apathy blaster available in one-reel form today.

FIRE'S THE ENEMY. 1951. 11 min. For loan or purchase from Film Libraries of the British Information Services. Made by the Crown Film Unit of the British Government, this picture is frankly directed at prospective recruits for the CD Auxiliary Fire Services. In depicting the life of a typical Auxiliary Fireman it shows the attractive new fire engines, fire launches, special hose-laying trucks, and power extension ladder trucks that provide up-to-date fire fighters with more effective equipment. Rescue exercises on a fire-school tower are augmented by scenes at a real fire in which the auxiliary fire fighters play their part. The film happens to be a very superior example of good cinematography, editing, recording, and writing, as well as being effective CD fare. America would do well if it would produce a series of CD recruiting pictures with such undeniable appeal.

FIRE FIGHTING FOR HOUSEHOLDERS. 1951. 9 min. For loan or purchase from Castle Film Libraries and many A-V dealers. Made by Teletran, Inc., of New York for the FCDA series of 1-reel information films. Based on the FCDA booklet of the same title, this picture briefly depicts several kinds of fire extinguishers: the soda-acid, the carbon dioxide, and the carbon tetrachloride. Portable pump tanks, the modern-day version of the stirrup pump of W W II, are shown in action, one being a sizable 2-man affair, the other a back-mounted type for use on roofs or other extended areas where but one person could operate. Safe housekeeping methods are stressed as a prevention for fire hazards. Film is useful as an introduction to home fire fighting.

DISASTER CONTROL. 1951. 21 min. For loan from many A-V dealers; for purchase from McGraw-Hill Text-Films, 330 W. 42nd St., New York, N. Y. Made by Transfilm, Inc., of New York, for McGraw-Hill Text-Films, the picture is based on a special issue of *The American Machinist* featuring a disaster-control plan for industrial plants. Using slide-motion technique, the film approaches the subject with a humorous touch as to drawings, but in fact carries the outlines of a very thoughtful and well-regarded disaster-control plan. The picture will be of more use to top management than rank-and-file employees, since it deals with planning, not execution.

TARGET U. S. A. 1951. 20 min. Available in black and white and in color. For loan or purchase from many A-V dealers and from the producers, Cornell Films Co., 1501 Broadway, New York, N. Y. Made by the producers of *Pattern for Survival*, this film features the problems of CD measures that are required for office and plant personnel. It demonstrates the value of test CD drills, shows the right and wrong way to evacuate to air-raid shelters from the plant and from the office. Commentary made by Hanson W. Baldwin (New York *Times* editor and military analyst) gives weight to the oft-repeated but none-the-less vital fact that atomic attack can happen to target U. S. A. This is an excellent incentive film for both office and industrial organizations who are interested in setting up CD measures for the protection and survival of their employees.

Where to Procure These CD Films

General Electric Film Libraries are located at the following addresses. Film requests and inquiries should be marked:

General Electric
Advertising and Sales Promotion Depts.
Apparatus Marketing Division
—710 2nd Ave., Seattle, Wash.
—235 Montgomery St., San Francisco, Calif.
—212 N. Vignes St., Los Angeles, Calif.
—650 17th St., Denver, Colo.
—1801 N. LaMar, Dallas, Texas
—112 N. 4th St., St. Louis, Mo.
—840 S. Canal St., Chicago, Ill.
—700 Antoinette St., Detroit, Mich.
—4966 Woodland Ave., Cleveland, Ohio
—187 Spring St. NW., Atlanta, Ga.
—1406 Locust St., Philadelphia, Pa.
—570 Lexington Ave., New York, N. Y.
—140 Federal St., Boston, Mass.
—Distribution Section, Advertising and Sales Promotion Depts., Apparatus Division, Schenectady 5, N. Y.

There are 80 army film libraries in the U.S.A. To locate the one nearest you, apply to one of the seven central film libraries of the following army areas, addressing your inquiry Attention Central Film Library, care of Army Headquarters, as follows:

First Army, Governor's Island, New York 4, N. Y.
Second Army, Fort George C. Meade, Md.
Third Army, Fort McPherson, Ga.
Fourth Army, Fort Sam Houston, Texas
Fifth Army, Fort Sheridan, Ill.
Sixth Army, Presidio, San Francisco, Calif.
Military District, Washington, D. C., Room 1543, Bldg. T7, Gravely Pt., Washington 25.

Films available from the British Information Services can be borrowed at the following eight offices:

British Information Services—
New York, N. Y.; San Francisco, Calif.; Chicago, Ill.
British Consulate General—
Detroit, Mich.; Houston, Texas; Los Angeles, Calif.; Seattle, Wash.
British Embassy, Washington, D. C.

U. S. Navy Film Libraries should be contacted via District Public Information Officers in Boston, Mass.; Norfolk, Va.; San Francisco, Calif.; Great Lakes Training Center, Ill.; Balboa, Canal Zone; New York, N. Y. Charleston, S. C.; San Juan, Puerto Rico; Seattle, Wash.; Kodiak, Alaska; Philadelphia, Pa.; New Orleans, La.; San Diego, Calif.; Pearl Harbor, T. H.; Washington, D. C.

Encyclopedia Britannica Film Libraries are located in New York, N. Y.; Boston, Mass.; Chicago, Ill.; Atlanta, Ga.; Dallas, Texas; Birmingham, Mich.; Pasadena, Calif.

Castle Films Libraries are located in New York, N. Y.; Chicago, Ill.; San Francisco, Calif.

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Seattle's 333 Miles Of 20,000-Lumen Mercuries

By H. W. TYLER
Principal Design Engineer
Seattle Engineering Department
Seattle, Wash.

SEATTLE, Wash., with a population of 462,981, has 1,350 miles of improved streets, and is lighting 333.7 miles (134 miles completed) of arterials at a cost of $4,000,000. Street lighting in Seattle consists of suspended incandescent lamps and reflectors at street corners on residential streets, and various types of ornamental standards constructed in the 1920's and 1930's, in the business districts.

Priority for new lighting is based on traffic-accident records, with consideration also given to districts with a high crime rate. Newly lighted primary arterials now reach into all sections of the city. In extending the new construction, an attempt is made to connect with previously lighted streets to prevent dark gaps on well-traveled streets.

Paid by Bond Issue

Financing was assured in November 1948, when the people voted $4,000,000 in general-obligation bonds to be refunded from tax revenues. The need for this bond issue was presented to the taxpayers on the basis of reduction of crime and night-traffic accidents. It carried by a 4 to 1 majority. Also making this program possible is the municipally owned hydroelectric development, assuring the city of low power rates.

Mercury-vapor lights were adopted as permitting greater mounting height and fewer units for the same amount of illumination. Low power consumption was another factor which made mercury vapor attractive—permitting wider coverage with the power available. Horizontal-burning luminaires were adopted as standard because of the modern design and high coefficient of utilization.

In accordance with the recommendations of the Illuminating Engineering Society, heavily traveled streets with a large number of pedestrians get an average light coverage of 1.5 foot-candles; streets with light traffic 0.75 foot-candles. Staggered spacing at 100 to 120-foot intervals is common with luminaires mounted at 30-foot heights. Slight variations in mounting height and 20% variation in individual spacing to meet existing conditions have given good results. Mounting from one side of the street has also proved satisfactory for roadway widths up to 42 feet.

This spacing and mounting height have been made economically possible by the newly developed 20,000-lumen mercury-vapor lamps. Except in tunnels and underpasses, Seattle has standardized on this lamp in horizontally mounted luminaires using Types II and IV distribution patterns.

The 20,000-lumen mercury-vapor lamp burns only 400 watts of electrical energy compared with approximately 900 watts for the same output of filament lamps. Lamp life, guaranteed by the manufacturers at 4,000 burning hours, has recently been increased to 5,000 hours.

In operation the light has a slight greenish color. At first some drivers complained that it was difficult to distinguish between the green traffic signals and the street lights. This may have caused some annoyance but no accidents. The red stop light gives good contrast. No concern was felt on this score after the initial adjustment period.

Lights supported on existing utility poles (about 85% of the construction) are being installed by line crews working with two tower trucks with 28-foot hydraulic lift. Lights supported on steel poles with underground wiring, which do not involve interference with existing overhead utilities, are installed by contract on a competitive-bid basis. The type of installation is used throughout parks, on boulevards, and in the downtown or underground district where overhead wiring is prohibited.

Construction crews are headed by a superintendent of street-lighting construction and consist of an assistant engineer who acts as pole negotiator, one foreman, six linemen, three ground men, and two line-material men who

The Aurora Avenue Bridge with its 57-foot-wide roadway lighted by 20,000-lumen General Electric mercury-vapor lights mounted 28 feet high spaced at 100 feet.

MAKES PLEASANT NEIGHBORHOODS

Like a welcome smile, good street lighting attracts people. It makes a community appear more attractive, prosperous and desirable. It is, in the words of a well-known official, the hallmark of a progressive community.

Well lighted streets are popular streets. With deep shadows gone, citizens feel safer—are safer. They appreciate the new freedom from fear of dark streets, the admiration of friends, and the compliments of visitors. As the mayor of Cleveland put it, "Civic pride goes hand in hand with civic accomplishment."

And good street lighting is appreciated. For example, in Vineland, N. J., when the new lights went on citizens were so pleased, city officials immediately ordered more of the new lighting. The Mayor of Beaver Falls, New York, put it this way, "Our new street lighting is the talk of the town."

Your electrical utility is vitally interested in your community's welfare. They have the know-how to help you modernize your street lighting quickly on an economically sound, planned basis. They can call on General Electric's services for planning and consultation.

G-E street lighting equipment has the flexibility to give you Comfortable Seeing engineered to meet the specific needs of your community. *Apparatus Department, General Electric Company, Schenectady 5, New York.*

Let your electric utility street lighting engineer show you how Comfortable Seeing SAVES YOU FAR MORE THAN IT COSTS.

GENERAL ELECTRIC

Street	Miles	Night Accidents	Night Injuries	Day Accidents	Day Injuries	Total Accidents	Total Injuries	Night Accidents % of Total	Night Injuries % of Total	Night to Day Accident Ratio	Night to Day Injury Ratio
Before											
A	1.70	96	25	178	22	274	47	35.0	53.5	0.54 to 1	1.14 to 1
B	4.30	77	13	138	12	215	25	35.8	52.0	0.56 to 1	1.08 to 1
C	0.76	35	5	55	6	90	11	39.0	45.5	0.63 to 1	0.83 to 1
D	1.70	80	5	105	3	185	8	43.2	62.5	0.76 to 1	1.67 to 1
Total	8.46	288	48	496	43	784	91	36.8	54.5	0.58 to 1	1.14 to 1
After											
A	1.70	85	11	186	10	271	21	31.4	52.4	0.45 to 1	1.10 to 1
B	4.30	104	18	448	15	552	33	18.5	55.0	0.44 to 1	1.20 to 1
C	0.76	37	5	96	11	133	16	28.0	15.4	0.65 to 1	0.15 to 1
D	1.70	94	17	189	19	283	36	37.2	47.2	0.50 to 1	1.12 to 1
Total	8.46	320	48	679	55	999	101	34.0	47.5	0.47 to 1	0.88 to 1

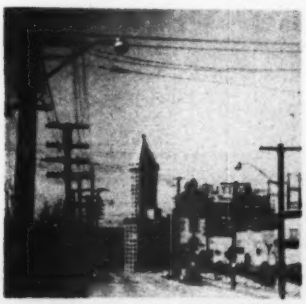
This table shows the results of a study of four streets covering a period of 16 months before and 16 months after the new lighting system was put into operation. Before relighting, night accidents were 54.5% of the total accidents; after relighting, night accidents made up only 47.5% of the total number.

also drive the tower trucks. The construction office and warehouse is staffed by one senior engineering aide, one stenographer, one warehouseman, and one laborer. This organization can install 15 complete units a day, or 1½ miles per week on wood poles.

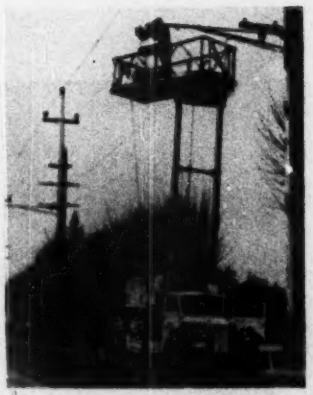
Construction involving all new work, particularly steel poles with underground wiring, is done by contract to electrical contractors. Nine contracts totaling $330,000 have been let.

A number of installations have been made with direct-burial cable, rubber-insulated and neoprene-jacketed in one, two, or three conductors. Cable is laid 18 inches deep just back of the roadway curb for maximum protection. Under driveways or cross streets, conduit is jacked into place and the cable pulled through the conduit.

Installation costs vary with the type of installation. The average cost of installation on existing wood utility poles is $160 per unit. This cost is increased to $220 for installation on new wood utility poles. New wood-pole installations often involve cross-arming for existing utilities. Installation of new steel poles with concrete bases and underground wiring (about 15% of the project) run $560 per unit including engineering and incidental charges.



A special bracket manufactured by the Hubbard Company of Pittsburgh, Pa., is shown above. It is used for mounting mercury-vapor lights on wood poles where utility cross-arms interfere with the standard installations.



Installing mercury-vapor luminaires with a 26-foot hydraulic tower lift, made by the American Coach and Body Company and mounted on a Diamond-T truck chassis. Note the adequate protection offered by the Trafficones, manufactured by Enterprise Sales Corporation, of Burbank, Calif.

The Value and Background Of Mercury-Vapor Lighting

By JAMES H. BURSON
Westinghouse Electric Corporation
San Francisco, Calif.

IN PLANNING your new street lighting, give due consideration to the new mercury-vapor lamps that generate 2½ times the light output per watt input that incandescent lamps do. This gives less power cost per light unit. Since the lamps average in service better than 5,000 hours, you have fewer than one lamp per year per unit average replacement. This compares with two or three lamp replacements per year per unit for incandescent lamps. Although the lamp costs more than the incandescent, you have roughly only one-third the labor cost in replacing lamps.

History

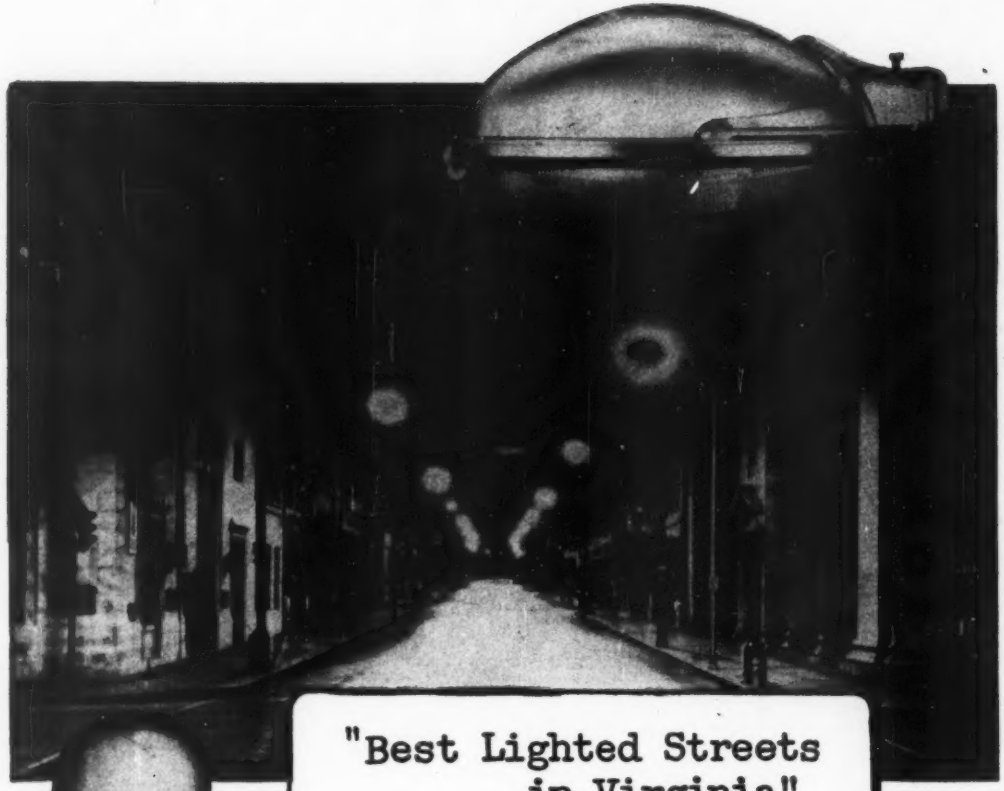
Because of the nation-wide interest in the facts just given, it may be helpful to present a quick history of mercury-vapor lamps and luminaires. The first sentence mentioned "new" mercury-vapor lamps. Can there be *old* equipment connected with this form of illumination? Yes indeed, for 20 years is a long time ago in illuminating engineering, and it was in 1932 that the Westinghouse Lamp Division introduced to the public high-intensity mercury-vapor lamps.

They were known as AH and BH lamps and were rated at 400 watts, 14,000 lumens. They were approximately 13 inches long and 2 inches in diameter; their life rating was 1,500 hours. Westinghouse supplied lamps and units for the first mercury street lighting in Denver, Colo., in 1936. As no special luminaire had been designed, luminaires for incandescent lamps were employed. The result was poor control of the generated light, as adapting this new and efficient light source to existing luminaires was pretty much like putting a gas burner or oil burner in an old furnace designed for coal.

The OV-20 luminaire for operating the E-H1 lamp in horizontal position.

The AH lamp is still in use for street lighting in many towns. Its lumen output has been boosted to 15,000 lumens; its life rating to 6,000 hours. Its major objections are that it can be burned only in a vertical position and it is too blue in color.

In 1938, Westinghouse Lamp Division introduced a new short-arc, or quartz, type of mercury-lamp called the EH1 lamp, first used at the New York World's Fair in 1939-40 to light the



"Best Lighted Streets in Virginia"

City Manager, Arthur Owens, Roanoke, Virginia, points with pride "to the first large-scale application of truly modern lighting in the Southeastern United States." The Westinghouse OV-20 mercury vapor lighting system, installed by the Appalachian Electric Power Company, is making a hit with the citizens:

"We have already ordered a sizable extension to relight our secondary business streets, and we believe that universally favorable response to this lighting system will eventually lead to installation of hundreds of similar units on our arterial approaches, bridges and viaducts."

Arthur J. Owens

What's more, they have invested in a system that is easy to maintain. Hinged construction of the OV-20 makes routine cleaning a matter of minutes. Relamping can be done with one hand.

Whether you buy lighting, install lighting or plan lighting, it will be worth your while to investigate the Westinghouse mercury vapor lighting story. Send for B-3876A, Westinghouse Electric Corporation, Box 868, Pittsburgh 30, Pa.

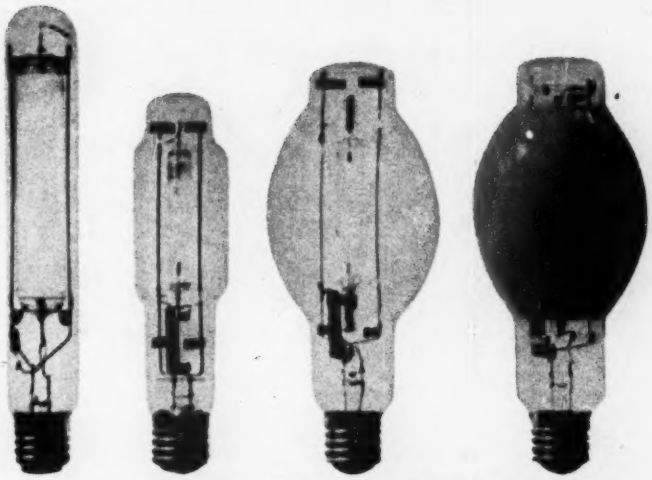
J-04302

large fountain and the trylon and perisphere.

Only 400 watts, its light output was 20,000 lumens. The arc stream of this new lamp was about 2½ inches long as contrasted with 6 inches long in the old lamp. Instead of operating at approximately one atmospheric pressure, it operated at 2½ atmospheres. The lamp could be burned in any position, it was 33% more efficient, and it was whiter in color. Its average life is now 5,000 hours.

Putting the new short-arc mercury lamp in a horizontal position for street lighting gave us a minimum vertical dimension of the light sources, permitting good vertical control. Vertical control was necessary for shielding to minimize glare, as well as directing the light to the roadway at the proper vertical angle to give maximum results on the street in pavement brightness. The first of these new optical systems with EH1 lamps went into service the early part of 1946. Since that time 100,000 units have been put into service on our streets and highways in every state in the Union—from Seattle, Wash., to Key West, Fla., and from Maine to California.

Prepared from an address presented at the convention of the International Municipal Signal Association, held at San Francisco, Calif., last September.



A portrayal of the development in 400-watt, 15,000-lumen, mercury-vapor lamps for street lighting. The AH lamp was the original; it was followed by the E-H1 (T-20) which was superseded by the E-H1 (BT-37) which operates in a horizontal position without auxiliaries. The J-H1 is the new fluorescent mercury lamp, and is coated inside with red sulphur for color correction.

Pleasant Night Driving in Denton, Texas

DENTON, Texas, City Commissioners decided that mercury-vapor equipment would give the most light for the least money, and installed 120 General Electric units on four streets. The result is the kind of illumination recommended for main traffic arteries throughout the nation. The lamps are six times as powerful as the former incandescents and give twelve times as much light at only six times the power cost. As the new units were installed, the replaced incandescents were installed in the residential area. It is expected that Courthouse Square will be similarly lighted.

The installation is multiple circuit controlled by photoelectric relays which give automatic switching on change from daylight to dark. Economy was realized through the use of existing electrical-distribution-system poles and transformers. Costs break down as follows:

$55.50	for luminaire and lamp
44.00	for ballast
13.00	for 8-foot Union Metal bracket furnished by General Electric Supply Corporation
5.00	per unit for contractor
8.00	per unit for photoelectric controls
2.00	per unit for wire
2.50	per unit for hardware
15.00	per unit for labor

This makes an average cost per unit $145, installed.

These lights have now been in operation for nearly a year and have proved so satisfactory that the city has purchased an additional 25 units, and it is hoped that many more units may be purchased in the future as funds are made available. Comments, suggestions, and criticisms are invited.

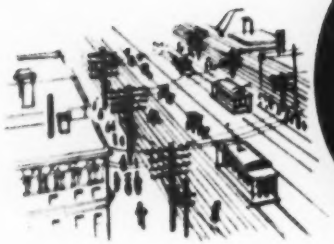
H. G. CREEL, JR.
City Engineer
Denton, Texas

Denton's 15,000-lumen mercury-vapor lamps in luminaires spaced 140 feet apart and mounted 25 feet high means pleasant night driving in the city.

Lyndhurst, Ohio—Not N. J.

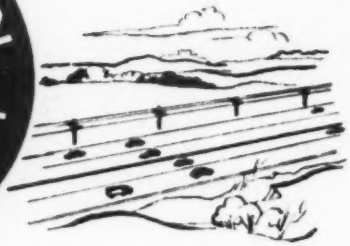
Lyndhurst, Ohio, not Lyndhurst, N. J., should have been the designation for the attractively lighted Village Hall shown on the front cover of the December issue. As their first New Year's Resolution for 1952, the editors of THE AMERICAN CITY hereby resolve to check and double check before publishing names associating cities with states. Hasty research discloses that there are also Lyndhursts in Missouri, South Carolina, Virginia, and Wisconsin.

Omitted in the December issue also was credit for the cover photo, furnished through the courtesy of the Noma Electric Corporation, 55 West 13th St., New York 11, N. Y., specialists in community display-lighting equipment.



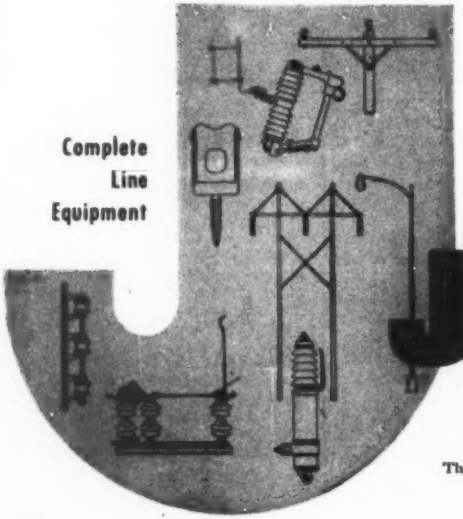
JOSLYN

50th ANNIVERSARY



Joslyn has served the Power, Light and Communications Industries through 50 years of amazing development and growth, and today thousands of miles of overhead lines are supported by Joslyn products, which, through their sound design and high quality, represent a large factor in maintaining these essential services in continuous operation.

On the occasion of our 50th Anniversary may we express our avowed purpose of continuing to serve these great and strategic Industries by supplying the finest line components and equipment that can be produced with quality materials and the most modern techniques.



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20 NORTH WACKER DRIVE • CHICAGO 6, ILL.

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The Joslyn Co. • The South East Joslyn Co. • Southern Joslyn Co.
Joslyn Southwest Co. • Joslyn Pacific Co.

By JOHN L. SULLIVAN
Mayor
New Britain, Conn.

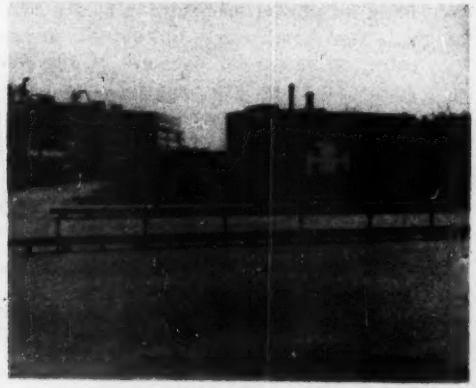
Three Parking Lots For 750 Cars at $363 per Stall

AFTER more than 30 years of talk and promises, the City of New Britain has finally done something about giving its citizens the parking space they need in the downtown area. We approached the problem with a workable plan for financing these new parking areas. We wanted to acquire land close to the retail and business section, and to improve it for parking with funds provided by a bond issue. We planned to retire the bonds and to pay interest through receipts from parking meters installed in these off-street areas, pledging the receipts to this purpose until the indebtedness was entirely paid.

Investigation of income from parking meters in several comparable cities indicated that parking meters in the spaces in our new areas would produce between $40,000 and $50,000 annually. Our bond issue was finally $270,000, payable over a nine-year period, and covered the cost of the land, improvements and construction, equipment, and even the parking meters themselves. Thus the parking areas will not only repay our bond issue, but will also produce a very satisfactory profit to the city itself in the nine-year period. After that, the profit will increase considerably when the bond issue and the low-interest charges at 1.4% have been paid off.

Our merchants were anxious to have the parking problem solved, but the long years of talk and unfulfilled prom-

Parking-lot sites sometimes look unprepossessing, as the upper two pictures show, but they can be made into busy parking facilities. Above are a pond (left) where muck in spots was 12 to 20 feet deep, and, right, a railroad siding waste space. Below are New Britain's completed lots, one solution to the problem of street congestion.



NIGHT DRIVING IS SAFER ON THE NEW JERSEY TURNPIKE!

... ALL Traffic Lines Marked Brilliantly with the PRISMO LIFE LINE ... America's Finest Reflective Traffic Paint

Enlarged sectional side view showing Prismo spheres embedded in the Prismo Life-Line Plastic Binder.

Night photo of the New Jersey Turnpike clearly showing the Prismo Life Line, marking all traffic lines brilliantly.

Through the exclusive use of Prismo, the finest reflective traffic paint in all the world . . . New Jersey marks the way for greater safety on its newest highway . . . the New Jersey Turnpike. The complete Prismo service, supervisory personnel, marking equipment and traffic paint, makes the newest turnpike . . . the safest turnpike, night and day. You can help reduce traffic accidents by marking your highways and streets with Prismo reflective traffic paints. Save time . . . Save money . . . by turning your traffic marking problems over to Prismo.

"Nothing Equals Prismo But Prismo"

. . . Write for informative bulletins on Prismo reflective traffic paint.

PRISMO SAFETY CORPORATION

HUNTINGDON, PENNA.

ises had discouraged them, and they were frank to say that they doubted that it ever would be solved. A preliminary survey of possible locations for the parking areas showed nothing available, even though we were willing to consider tearing down existing buildings.

Improving "Bad Land" Lots

When eventually we found our land, it was a long way from ready for parking. One location was a parcel on which stood an old school building that housed three city-department offices. Another was a piece of railroad land with three unused spur tracks running through it. A third was the old Lock Shop Pond, completely under water and used only as a dumping ground for factory refuse and an outlet for city storm sewers. However, they were sizable areas, very near to the main business section, and the Board of Aldermen approved them and their acquisition for $90,000.

The old spur yard did not give us much trouble—it was mainly a matter of removing old railroad ties and tracks and tidying up—but the Lock Shop Pond was a challenge. The depth of the water averaged 6 feet. The bottom was a muck of graphite, acids, grinding materials, and other manufacturing wastes that had gathered for nearly 100 years, with an average depth of more than 10 feet.

The complicated system of storm sewers flowing into the pond added to the difficulty of reclamation. The job was licked by a group of private contractors and a force of loyal city employees who worked as though the most important undertaking in the world was dredging and filling the old pond.

Now, with this site completed and lighted, we are planning to remodel an old building on the lot to provide a bus terminal, a taxicab office, a cafeteria, rest rooms for the parkers, and office quarters for the commission which administers the parking areas.

In this way, areas which only a short time ago were eyesores and, in the case of the Lock Shop Pond, a disease-infested body of impure water, have now become profitable and attractive municipal assets that have increased the values of adjacent properties.

Meter Rates

About 750 cars can be parked in these new city-owned and operated areas. Mark-Time "Hurricane" manual parking meters were installed and set for two time groups—some at the rate of 5 cents for 2 hours, 10 hours for 25 cents; others at the rate of 5 cents an hour, with a limitation of three hours. Parking is metered at the Lock Shop Pond area from 8 a.m. until 6 p.m., and at the other areas from 8 a.m. to 9 p.m. At other times the lots are open to public use at no charge.

Trees and shrubs are being planted to make these areas more attractive. A multi-colored fountain, gift of a leading merchant, is being installed. We call these new areas "Parkades." Maybe we've started a new word on its way into the American language.

All this was not the work of one man or small group of men. It surprised me how many people wished to do something to make this venture successful. Special credit goes to our Board of Aldermen, our merchants, industries and labor unions, the contractors, and the city employees.

Perhaps the principal lesson is that if a community doesn't acquire needed parcels of land near the business sections while these are still available, that community is asking for mercantile strangulation. When open land disappears and valuable commercial land must be acquired for in-center parking, the costs are enormous. The new ramp garage for the City of Bridgeport will house only 400 cars—but it will cost more than $2,000,000. The City of Hartford has voted $3,000,000 for a ramp garage that will accommodate only about 750 cars.

Remember that our three New Britain areas accommodate 750 cars, cost only $270,000, will pay for themselves in nine years and will pay a sizable profit to the city while providing critically needed parking at low rates.

Profitable Parking Meters

By ZETTO A. FAULKNER
City Traffic Engineer
Evanston, Ill.

STEPS to alleviate a critical parking problem in this city (population 73,030) were first taken in April 1948 with the installation of 1,191 Magee-Hale Park-O-Meters on the main business streets of the city. The initial operation proved so successful that additional meters were installed; 1,482 meters were in operation by December 31, 1950.

Use of Revenue

Collections from the parking meters cannot be used for any other purpose than for parking-meter maintenance, purchase of new meters, and additional parking lots. All parking-meter collections are deposited in a special parking-meter banking account and are accounted for in a separate fund.

From these proceeds, the city has purchased five parking lots. They have been graded, surfaced, metered, equipped with a drainage system and with floodlights for night parking, and marked with parking spaces. Directional signs to the lots are placed in eye-catching spots on the city streets, making it convenient even for strangers to locate the parking lots. In addition to these lots, the city has a 10-year lease on a sixth lot with an option to renew the lease.

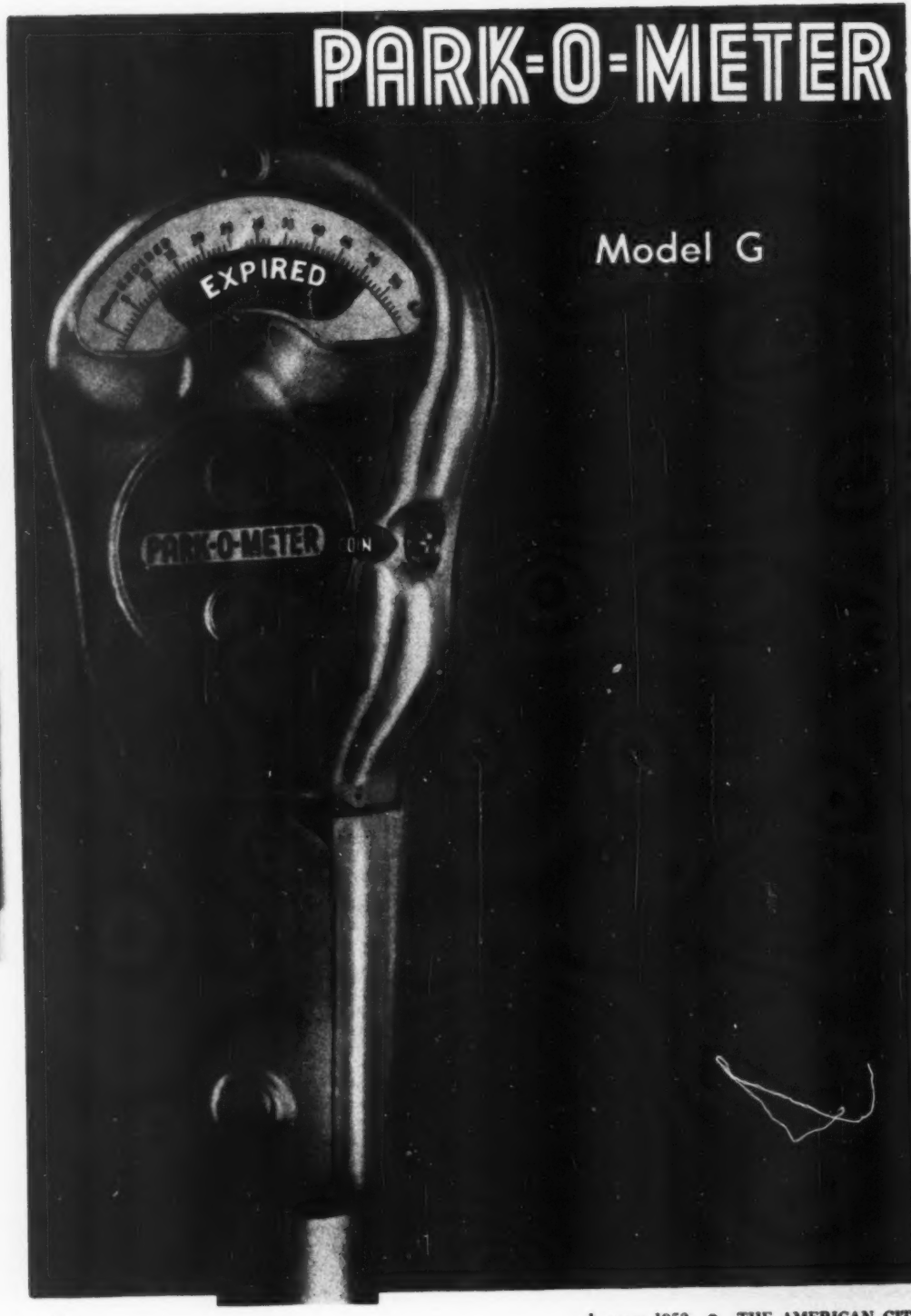
Curb-parking meters have one- and two-hour parking limits; parking lots permit two- to three-hour parking. Parking operations utilize existing municipal departments: the city's law department handles all legal matters; the traffic engineer supervises installation, operation, and maintenance; the city collector is responsible for meter collections, and the police department checks for violations and reports on meters out of order.

In addition to paying for operating expenses, parking-meter receipts have provided the city with $245,604.11 in parking facilities: parking lots, $140,037.64; improvements to leased lot, $6,322.61; office equipment, including counting and sorting machines, $1,598.93; parking meters, $91,431.71, and motorcycles and automobiles, $6,213.22. This was during a period of 33 months.

Gross receipts from all meters for the period between April 1948 and December 31, 1950, amount to $325,588.87. For the calendar year 1950, street meters have averaged 29.45 cents per day in gross receipts, or 23.10 cents per day in net income. Gross income per meter per day was 43.20 cents, and net income per meter per day was 20.25 cents on one parking lot, with another lot showing 19.22 cents gross income and 11.05 cents net income per day. One small lot, in operation for only 97 days, reflected a net loss of 5 cents per day.

J. A. Carrothers Becomes Dayton's Traffic Engineer

J. A. CARROTHERS, traffic engineer and a member of the Detroit Traffic Engineering Bureau from 1938 to 1945, has been appointed City Traffic Engineer of Dayton, Ohio, (population 270,000. As traffic engineer of the Association of Casualty and Surety Companies, in New York, N. Y., he made some notable surveys and many friends. At Dayton the traffic engineer heads a division under the Service Director with functions distributed throughout the police, public safety, finance, and City Manager's departments, whose heads constitute an advisory committee.


PARK-O-METER
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Minneapolis Business Provides New Parking Garages

By GORDON W. COWAN
Minneapolis Chamber Commerce
Minneapolis, Minn.

HENRY FORD probably never foresaw it, but the mass production of automobiles, while a great boon to foot-sore pedestrians, creates many a headache whenever motorists converge en masse on any central point.

Take the Minneapolis Loop, for instance. People like to drive downtown to shop, to dine, to attend shows. But no motorist is so enamored of loop attractions that he will long put up with endless block-circling, the harassment of hordes of opposing vehicles, or the necessity of walking eight or ten blocks when finally he does find a parking space.

In 1946, the Minneapolis Chamber of Commerce Street Traffic Committee made a continuing study of off-street parking facilities and concluded that erection of a number of multi-story parking garages would save the Minneapolis loop from decentralization. By July 1950, the Committee had persuaded downtown business interests to underwrite two off-street parking decks. As a result, a corporation, Downtown Auto Park, Inc., was formed, its officers and directors serving without salary.

The corporation functioned quickly and efficiently. The officers and directors began raising equity capital, arranging long-term mortgage financing, and consulting with architects and engineers. Parking engineering assistance was furnished by National Garages, Inc., of Detroit, Mich. Within a few months, the group acquired two sites—the first at Marquette and Fourth Street and the second at LaSalle Avenue and Ninth Street, both in the central Loop. In September 1951, the first of the two parking structures was completed and the LaSalle ramp opened October 3. Total cost of the two ramps, not including land sites, is about $1,413,000.

Can Be Done Quickly

So, in hardly more than a year's time, two huge buildings have become available to "shelve" the public's vehicles. The Marquette ramp accommodates 535 cars on its six levels; the LaSalle ramp provides for 819 cars on eight levels. Parking rates are 25 cents for the first hour, 15 cents for each additional hour, and a maximum charge of $1.50 for a 24-hour period. For regular parkers, stalls are rented at monthly rates ranging from $12 on the roof to $23 in the basement.

Downtown Auto Park's Fourth Street and Marquette Avenue garage in Minneapolis; the 535 stalls of its six parking levels handle around 1,350 cars a day.

The two garages are operated under a management contract by National Minnesota Garages, Inc., an affiliate of National Garages, Inc.

Keynote of the entire operation is swiftness and courtesy. The attendants never fail to greet incoming parkers and to inquire if they wish their cars filled with gasoline, lubricated, or washed. But when a patron returns for his car it is then that the lightning-like service becomes evident. Even before the cashier takes any money, she hands the ticket to a waiting carhop who immediately dashes to the "man-lift," shoots up to the proper deck, and delivers the car to the startled customer almost before he can say, "I like parking in downtown Minneapolis."

Total Parking in the Loop

In the "convenience area" for parking in the Loop shopping district, there already exist some 680 Dual and Park-O-Meter stalls at the curb. On the average, each of these stalls handles 20 cars daily, from 8 a.m. until 6 p.m.—a turnover every 30 minutes. Thus, 13,600 cars are parked for 30 minutes at central Loop curbs during the average business day.

In addition, privately operated parking lots in, or contiguous to, this same area can accommodate another 700 shopping parkers. Turnover in these lots is estimated at twice daily, giving total availability of 1,400 parking spaces. In all, then, curb stalls and privately operated parking in the immediate Loop lots can handle about 15,000 automobiles daily.

The two new parking ramps provide some 1,350 stalls. Downtown Auto Park officers anticipate these stalls will have a turnover two and one-half times daily, thus accommodating some 3,385 cars each day. So the addition of these two ramps add a significant 22½% to the central Loop's parking facilities.

Is this enough?

No, agree Downtown Auto Park officers and city-traffic authorities. Additions to parking facilities themselves create a new demand. In the last five years there has been an increase of 50% in the number of passenger cars registered in Hennepin County. More multi-story parking ramps will be needed.

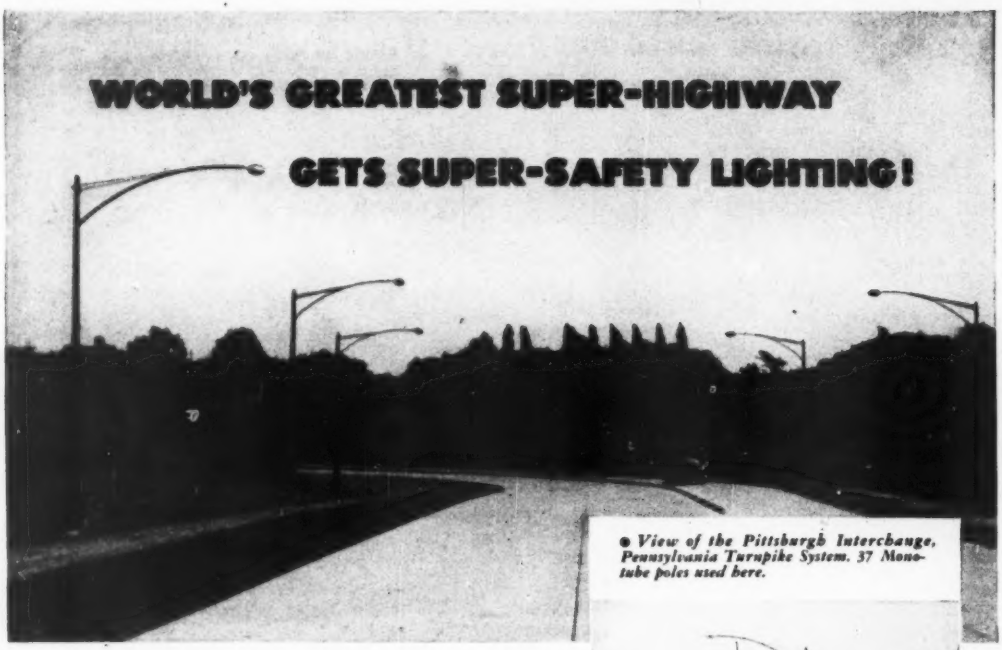
More Trolley Coaches In Chicago

STREETCARS on Cicero Avenue, in Chicago, have been replaced by 47 new 49-passenger trolley coaches, part of a fleet of 349 built for the Chicago Transit Authority by the Marmon-Herrington Company, of Indianapolis, Ind.

Equipped with wide front-entrance and mid-bus-exit doors, the new vehicles permit faster, more convenient loading and unloading of passengers. They will be operated two minutes apart during the morning and evening rush periods, at intervals of eight or nine minutes in the midday and evening hours, and on a 30-minute headway in the "owl" period. To date Marmon-Herrington has delivered around 170 buses; the remaining 179 are expected not later than mid-summer.

WORLD'S GREATEST SUPER-HIGHWAY

GETS SUPER-SAFETY LIGHTING!



● *View of the Pittsburgh Interchange, Pennsylvania Turnpike System. 37 Monotube poles used here.*

Interchanges of Pennsylvania Turnpike "Western Extension" Use

MONOTUBE LIGHTING POLES

● *Entrance to the Pittsburgh Interchange. (Photos courtesy of Pennsylvania Turnpike Commission).*

WITH the opening of the Pennsylvania Turnpike's Western Extension, motorists now enjoy additional travel on a super-highway second to none.

67 miles long, the Western Extension connects the original portion of the turnpike with Ohio. 327 miles of magnificent, uninterrupted highway from the Ohio border to Philadelphia!

In keeping with the most modern standards of traffic safety, tapered steel Monotubes were selected for the six Interchanges—205 single and twin light poles. The average light source is 31 feet, with bracket lengths varying from six to fifteen feet.

Monotubes are used here, as they are on streets and highways across the country, because of their adaptability to any street lighting requirement. There are standard ranges in pole size, gauge, height, and brackets to meet *any* condition. There are round and fluted types perfectly suited for every kind of service—from residential areas and arterial highways to the finest "White Ways".

If your community is planning street lighting modernization, or lighting for special areas, find out how Monotubes can help do the job efficiently —and economically. For information, write The Union Metal Manufacturing Co., Canton 5, Ohio.

UNION METAL

Monotube Street Lighting Poles

What Stream Pollution Means Nationally

HOW SERIOUS is stream pollution? Are the present controls over it adequate? What governmental level should have the responsibility for pollution control? And who should pay for pollution reduction? These four questions were answered by Louis R. Howson, of Alvord, Burdick and Howson, consulting engineers, of Chicago, Ill., at the recent meeting of the Federation of Sewage and Industrial Wastes Association held in St. Paul, Minn.

To answer the first, stream pollution is serious, but we've made a lot of progress. A U. S. Public Health survey of 11 major river valleys, representative of the country as a whole, showed major streams gravely affected. This pollution, if not corrected, will eventually affect all water resources, whether developed for flood control, irrigation, hydro-electric, municipal use, industrial use, or recreation.

Nevertheless, the progress on the other side of the ledger shows that we've made tremendous advances since the turn of the century, the date when the abatement program is considered to have started. By 1920, 1,000 municipalities had treatment facilities. This covered 10,000,000 people or 18% of the nation's urban population. By 1930, the list of municipalities had grown to 2,400 and included 18,000,000 people, or 35% of urban population. By 1950, the nation had 6,700 plants serving 60,000,000, or 65% of the urban population.

In Mr. Howson's opinion, present controls over stream pollution are adequate to bring about necessary abatement practices, and the local government, or groups of local governments, should have the responsibility for correcting pollution without recourse to grants from the Federal Government.

Newark, N. J., Names Flockhart Chief Engineer

JOHN FLOCKHART now holds the post of Chief Engineer for the City of Newark, N. J., left empty recently by the death of L. Dudley Coles.

Mr. Flockhart has been employed by the City of Newark since 1921, starting as a draftsman. He entered the Bureau of Sanitation in 1930 and was named Supervising Engineer in 1946. He obtained his engineering training at Stevens Institute of Technology and Polytechnic Institute of Brooklyn. He is a member of the American Society of Civil Engineers, a board member of the Municipal Section in the American Road Builders Association, and a past president of the American Public Works Association.

"Dad burn it-
Ole Man Winter
hasn't changed a bit!"
Baker V-Type Snow Plow
Baker Reversible Tripping Blade Snow Plow
Baker One-Way Tripping Blade Snow Plow

Yes, Sir! Grandpa's stompin' mad! These new fashioned winters have put his old fashioned ones to shame. Weather bureau records prove that 1948, '50 and '51 dumped more snow on grandpa's-in-the-making than grandpa ever knew. He's fit to be tied —particularly when grandson rubs salt in his wounds by saying "wait 'til I tell *my* grandchildren about the winters *we* had!"

Note to Street, Highway, Airport Departments: The weather bureau sees no sign that winters will soften up a dad-gummed bit. So, be ready—with Baker Snow Plows—grader, tractor or truck mounted.

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What's *your* decision?

A famous sports *"call"* presented by AHRENS-FOX

The history of sports is crammed with crucial decisions. . . . Decisions — that right or wrong — must be QUICK decisions. For instance — the famous "long count" in the Dempsey-Tunney fight — Sept. 22, 1927 has been argued about for years. In the 7th round Dempsey floored the champ for a count of 5. At that time the referee waved Dempsey to a neutral corner — and started the count over! At 9 — Tunney got up — and the fight ended with a victorious Tunney — a badly-beaten Dempsey. AFTER the fight — the time-keeper quoted the rule as saying "When a contestant is down — his opponent shall retire to the farthest corner and remain there until the count is completed. Should he fail to do so — the referee MAY cease counting . . ." Was the decision right or wrong? What's your decision?

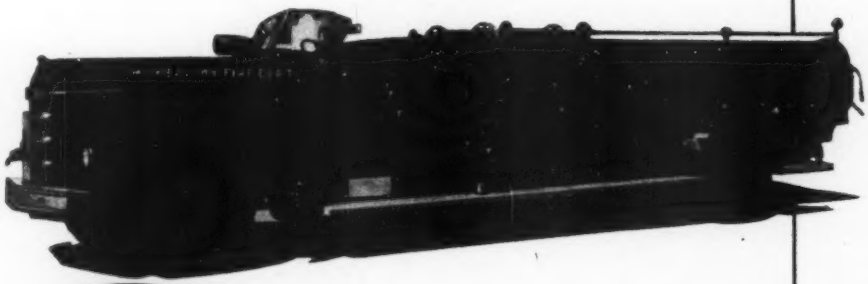
NO NEED FOR SPEED

In sports—decisions *must* be quick. But—in choosing fire-fighting equipment—it's smart to take your time—weigh every point.

Do this—for *your* sake—for your community's sake. Take your time and we know you'll choose AHRENS-FOX equipment, because for years Ahrens-Fox has made the world's finest fire-fighting apparatus.

Ahrens-Fox is soon planning to celebrate their 100th anniversary. Yes—since the invention of the "fire engine"—the name Ahrens-Fox has meant the world's finest. And Ahrens-Fox will continue to supply you with the finest fire-fighting apparatus—far into the future.

So—take your time—study every factor—then you'll *know* why you should choose Ahrens-Fox.



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AHRENS-FOX FIRE ENGINES

CINCINNATI, 14 OHIO

Special Features of Our New Purchasing System

By LEONARD C. HOWELL
City Manager
Des Moines, Iowa

WHEN Des Moines began operation of council-manager government last year it inherited a purchasing system probably not unlike that which has confronted certain other cities when they changed to another form of government. Among other things, the purchasing service was not much more than an order desk in the Department of Finance. A large amount of the buying was negotiated by individual departments and agencies, resulting in many small orders and an excessive number of confirming orders. There was little or no control over commodity and supply inventories. All proposed purchases in excess of $500 had to be advertised, and bids were opened and read in open City Council meeting. Thus purchasing was a time-consuming burden for the City Council.

Iowa law requires the City Manager to "make all purchases of materials and supplies and see that such materials and supplies are received and are of the quality and character called for by the contract." With our general reorganization of the city government, the purchasing service was lifted out of the Department of Finance and placed directly under the City Manager as a staff service in an office adjacent to that of the Manager. Subsequently, a modern purchasing ordinance was adopted by the City Council. The purchasing service became centralized.

City Manager or Council Awards

Certain provisions of our ordinance probably are of general interest. Formal advertised bidding is now required only on amounts over $1,500, is optional on lesser amounts. All bids, except those concerned with letting contracts for special-assessment construction projects, are opened publicly by the City Manager or his designated representative, the Purchasing Agent. The City Manager exercises the option of making the award or submitting his recommendation to the City Council for the latter to make the award. When a bona fide operating emergency occurs, the City Manager is permitted to make, with proper safeguards, non-competitive purchases not in excess of $5,000. Optional good-faith deposits in the form of cash, certified checks, or bidding bonds not to exceed 10%, and appropriate performance bonds, are also provided for.

In order to obviate the paper work and labor involved in buying small items (under $10) not warranting storehousing, a Purchasing Agent's revolving petty cash fund has been set up through which the Purchasing Agent reimburses the using department for such approved purchases upon presentation of the vendor's receipt.

The intent of the ordinance has been amplified by the provisions of the "Purchasing Handbook," a manual prepared for both vendors and city personnel. Two other purchasing problems that arise on occasion are regulated thereby: the buying for "unforeseeable urgent needs," such as the breakdown when most needed of an only piece of equipment; and "after-hour" breakdowns and needs for commodities not carried in stores. With the control now provided over the latter two situations, confirming orders are practically nonexistent.

As a further safeguard against paper work and delays, and in order to place upon using departments the responsibility for always having materials on the jobs when needed, a "sub-order" procedure has been adopted for two classes of purchases—those made pursuant to contracts entered into with the vendor (concrete materials, coal, gasoline, and publishing work) and those available at a fixed rate only (electricity and telephone service). Under the sub-order plan the Purchasing Agent, with the approval of the Director of Finance, certifies to the using department its amount of a given contract or appropriation, and the using department orders deliveries from the vendor direct as needed.

Three Stores

By directive of the City Manager and through authorization of revolving funds by the City Council, three major stores have been established: the City Yards, the City Garage, and the General Supply Store. To control these stores as well as to provide a usable commodity-purchase record, a combined perpetual inventory-commodity record has been set up in the office of the Purchasing Agent. To this record are posted all purchases and all priced-out withdrawals from stores. All salvage likewise is handled and controlled thereby.

We have gone a step further perhaps than some other cities in tying our purchasing and inventory operations into our cost and budget accounting. In all instances where costs are kept on construction projects, motorized equipment, and operating services, both direct purchases and withdrawals from stores are identified by work-order numbers and forwarded to the cost-accounting division of the Finance Department. With proper adjustments for sales taxes and discounts, the city's general accounts thus are reconcilable with the purchasing records.

This is a brief description of the more unusual features of the purchasing service we now have in Des Moines. The more standard provisions of any good public-purchasing system are, of course, part and parcel of the over-all plan. The new system has been in complete operation only a few months, as of this writing, but our experience convinces us that we have developed a modern, workable, and satisfactory purchasing procedure for cities our size.

Much credit for the progress we have made should be given to H. W. Odendahl, our Purchasing Agent; our advisor John Ward, Purchasing Agent of the City of Chicago, and the staff of my own office.

Haifa, Israel, Announces Planning Competition

THE Mayor of Haifa, Israel, Aba Hushi, reports that Haifa Municipality has announced a public competition for the replanning of 300 acres—the Old City, which was partly demolished in 1948-49, the business area adjoining the port, and the former "German Colony." This is the largest competition published so far in Israel with regard to both importance and awards. Submission of entries ends March 17, 1952.

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"Advice to a city about to modernize its metered parking" is available upon request. Write us today. No obligation.

835 NORTH WOOD ST **DUNCAN PARKING METER CORP.** CHICAGO 22 ILL

Manufacturers of AUTOMATON *fully automatic and* MILLER *manual parking meters.*

Conversion Pays in Cheaper Kilowatts

By H. J. WILLIAMS
General Superintendent
Water and Electric Plant
Carthage, Mo.

TWO large diesel engines operating on low-pressure natural gas have successfully reduced fuel costs to less than 2.4 mills per kilowatt-hour in Carthage, Mo. These two-cycle Nordberg engines were converted recently so that they can be switched instantly from fuel oil to natural gas or from natural gas to oil without difficulty despite their high horsepower.

The first unit to be converted was a 3,600-hp, two-cycle solid-injection Nordberg diesel engine of 9 cylinders, 21½-inch bore, and 29-inch stroke, developing rated horsepower at 225 rpm. This unit ran from April 1, 1949, to February 26, 1950, as a full diesel. Shut down on February 26 for conversion, the engine was back on the line as a Duafuel unit on April 7, 1950.

The next conversion job was done on a 3,200-hp, 8-cylinder Nordberg engine of the same speed and cylinder size. This engine had been in service as a full diesel since April 26, 1946. It was shut down on May 5, 1950, and put back into service as a Duafuel unit on June 8, 1950.

This 3,600-hp Nordberg engine went on Duafuel operation in April 1950. It can be switched instantly from gas to oil or oil to gas. The American Bosch fuel pumps inject pilot oil, while the actuator pumps regulate the lift of the gas-admission valves.

Excellent Performance

The 3,600-hp engine, designated as No. 7 in the plant records, generated 5,536,300 kw-hrs. in its first five months as a Duafuel. In that period, the unit consumed 59,945,326 cubic feet of gas and 34,400 gallons of pilot oil. Figuring gas as 1,000 BTU per cubic foot and oil as 144,000 BTU per gallon, the BTU-consumption per kw-hr. was 10,828 of gas and 893 of oil. During this period, the engine ran 2,920 hours at an average load of 1,896 kw, with peak loads of 2,300 kw and higher. Consumption of cylinder lubricating oil totaled 1,445 gallons. No oil was added to the crank-case supply. This consumption represented an excellent 7,274 hp-hr. per gallon of lubricating oil.

The 3,200-hp engine (No. 6) generated 3,899,000 kw-hrs. in the same five-month period. This unit is served by a motor-driven scavenging air blower and the current consumed by the blower has been subtracted from gross generation to obtain the net figure cited. The engine used 41,155,674 cubic feet of gas and 30,169 gallons of pilot oil, an average of 10,555 cubic feet of gas and .0077 gallons of oil per kw-hr. This meant 10,555 BTU of gas and 1,108 BTU of oil for a total of 11,663 BTU per kw-hr. The engine ran 2,413 hours at an average net load of 1,615 kw. Cylinder-oil consumption was 1,074 gallons, and 76 gallons of lubricating oil were added to the crank case, a total of 1 gallon of lubricating oil for each 6,714 hp-hr. of operation.

The cost of natural gas for the No. 7 engine was $9,591, and pilot oil cost $2,924, for a total fuel cost of $12,515, or an average of $.00226 per kw-hr. This production economy was achieved with gas averaging $.16 per million cubic feet and oil at $.085 per gallon.

Comparison with 1949

The corresponding five months in 1949 provide an excellent basis for comparison and appraisal of Duafuel operation. All units functioned as full diesels. The No. 7 engine produced 4,577,400 kw-hrs. while consuming 334,554 gallons of fuel oil, an average of 13.7 kw-hr. per gallon. The No. 6 generated 2,506,200 kw-hrs. (again a net figure after subtraction of blower consumption) on a total of 187,777 gallons of fuel oil, an average of 13.3 kw-hr. per gallon.

With comparable fuel efficiency, the No. 7 engine would have required 404,109 gallons of fuel oil to produce the 5,536,300 kw-hrs. generated in the five months of 1950. At the prevailing fuel cost of $.085 a gallon, this would have meant a fuel cost of $34,349.27, or an average of $.0062 per kw-hr. Actual cost of natural gas and pilot oil was $12,515, leaving a net savings of $21,834.27. The saving per kw-hr. was $.00394.

To produce its 3,899,000 kw-hrs., the No. 6 engine would have required 293,158 gallons of fuel oil at a cost of $24,918.43, an average of $.00639 a kw-hr. Actual cost of gas and pilot oil was only $9,149.00, leaving a net saving of $15,769.43. The saving per kw-hr. was $.00405.

Total savings on fuel for just five months of Duafuel operation were an impressive $37,603.70. At this rate the saving amounts to $90,248.88 per year.

The natural gas is supplied by the Gas Service Company, a subsidiary of the Cities Service Gas Company, and is delivered from the gas company's master meter at 24-psi pressure. Rust and scale are removed in a Blaw-Knox gas cleaner and the gas is then regulated to 17-psi pressure and passed through a Roots-Connersville positive-displacement rotary meter for each engine. Reaching the engine at 17 psi, the gas goes through an admission valve to a header and then through regulated throttle valves to each cylinder. Gas enters the cylinder through an actuator valve controlled by an actuator pump which hydraulically affects the lift of the valve. The pump, in turn, is controlled by the governor to meet varying load conditions.

For Duafuel operation, a constant-volume small charge of pilot oil is injected to facilitate and stabilize ignition of the gas. This pilot oil is handled by the regular fuel-injection pumps and nozzles which serve the engine in full diesel operation. The plant uses the same fuel oil for diesel and Duafuel.

SUMMER OR WINTER, G-E Floodlighting can increase the use of outdoor recreational facilities in your community. Scenes are enlargements from the 16mm film "A Chance to Play," available from the General Electric Company.

Make your play areas more useful with G-E Floodlighting

The only time a large percentage of our adult population can relax is in the evening.

Moreover, youngsters above a certain age continually seek "something to do" after dark.

You can do a great deal toward building better community spirit . . . encouraging healthful family activities . . . preventing juvenile crime . . . lowering street accident rates . . . simply by providing floodlighting to make your existing recreational facilities ***usable after dark.***

Here are some of the helps General Electric offers you to assist in planning floodlighting to serve your community needs:

MOVIE: "A CHANCE TO PLAY," prepared by the March of Time for General Electric. This dramatic 16mm documentary film will help sell your community on the need for adequate recreational facilities.

SPORTS FLOODLIGHTING for all types of sports is covered in G.E.'s "Manual of Floodlighting Plans." Gives complete specifications down to wiring details! The hardest part of ***any*** lighting job, the engineering, is done for you in this manual.

SPECIALIZED SERVICE is provided by highly trained General Electric lighting specialists to help you with unusual floodlighting problems, which cannot be handled by your local contractor or from standard plans included in G.E.'s "Manual of Floodlighting Plans." He's available through your local G.E. sales office.

FOR INFORMATION on the "Manual of Floodlighting Plans" or the film "A Chance to Play," write to Section 451-169, ***General Electric Co., Schenectady 5, New York.***

HELP PREVENT DELINQUENCY. A few floodlights to make neighborhood play areas usable after dark will go a long way. Scene is from film "A Chance to Play."

GENERAL ELECTRIC

451-169

"Operation Family Reunion"

The "Lake Charles Plan" for more housing—and some words of warning

By JOHN T. O'BRIEN, *Director of Information*
Office of Rent Stabilization, Washington, D. C.

THE VETERAN just returned from Korea plodded through the streets of a crowded city searching the windows for "for rent" signs. His wife and children still were many states away. Then he noticed a headline on a newspaper that read, "Lake Charles Plan Will Make More Housing."

The returnee didn't know it then, but behind the facades of some of the large graceful mansions in the city people were at work converting their homes into multiple-apartment units. His answer would soon be forthcoming.

From the magic only a public-spirited community can produce, new units suddenly appeared in huge homes that once served to house the large families of yesteryear.

Why the "Lake Charles Plan"?

The program that has been accumulating momentum throughout the nation since early last summer is called the Lake Charles Plan because it began as a community experiment made in that Louisiana oil town.

At Lake Charles, where an in-migration of workers vied for housing with airmen stationed at the Strategic Air Command's near-by base, 700 military families alone were on waiting lists.

"Why not convert these fine huge homes into two or three apartments?", Tighe E. Woods, Director of Rent Stabilization, asked Mayor Tom C. Price, of Lake Charles.

From this beginning grew the plan that gives something to everyone. The mayor, bankers, building-materials concerns, real-estate and insurance agents, appliance shops—all cooperated with homeowners and city officials to make the conversions as easy as possible.

Homeowners desiring to convert their units found they could secure loans from the Federal Housing Administration or their local bank, and that the Office of Rent Stabilization gives prior opinions on the rent they may receive so they would know exactly what profit they could expect from their new units.

In Lake Charles alone, the program produced an estimated 850 new housing units for military families in a short time.

In Lowell, Mass., where soldiers stationed at Fort Devens are home-hungry, the Lake Charles Plan was launched as a cooperative community project. According to Lieutenant Colonel Mark Amen, personnel staff officer at the military installation, this civilian program is expected to supply much of the housing needed by those of the 800 military men who haven't already found off-base housing for their families.

In Norfolk, Va., steering committees to launch the plan are made up of representatives of women's groups, religious groups, and veterans. They call their program the "Tidewater Plan." Conversions are being made by the addition of a bathroom and kitchen in some cases. Others, requiring a little more work, are getting the full backing of local groups as city after city begins to make its new homes for servicemen.

In such cities as Vallejo, Calif., Milwaukee, Wis., and Newport, R. I., where Navy men benefit, conversions are creating more housing. And it's all done strictly as a civilian project by citizens interested in giving the soldier, marine, sailor, and airman a chance to be with his family as long as he can.

Support for Conversion Comes from All Sides

For example, the Lake Charles Plan was brought to Brunswick, Maine. Support for the conversion program there from local real-estate men, bankers, and other influential members of local organizations is expected to produce at least 300 of the 800 housing units needed by military men.

In Boston the plan is being enthusiastically received. The Tile Council of America sponsored a meeting for the sole purpose of promoting "Operation Family Reunion," another name for the Lake Charles Plan. Present to give their support to the conversion program were Governor Dever of Massachusetts, Mayor Hynes of Boston, prominent military representatives, including the Commanding General of the First Army and of the Air Force, and the Commandant of the Area Naval District.

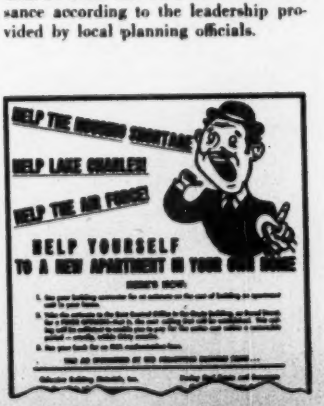
Mr. Woods promised assistance from ORS. He said ORS (1) gives estimates of cost of converting larger-type homes into multiple living units, (2) adjusts rentals on potential units on an equitable basis for both landlords and servicemen tenants, and (3), where possible, expedites supplies of materials needed for conversion purposes.

Roy W. Schweiker, chairman of the Tile Council of America, estimates there are about 23,000,000 dwellings in the United States more than 30 years old. Many of these are fine old homes that will be tomorrow's modern conversions—a positive answer for the serviceman mentioned at the beginning of this article. A word of warning should be sounded, however.

Boon or Nuisance?

This emergency plan should be clearly recognized for what it is—a stop-gap program to help solve a critical problem. When a city or village is overwhelmed by a mass influx of people, and all local facilities are overtaxed, the Lake Charles Plan is an emergency measure to obtain full utilitzation of existing housing by a community campaign to modernize, rehabilitate, and convert existing structures to produce more family units.

With professional leadership and guidance of city planning officials, the program to produce additional self-contained, family-type dwelling units can also generate the drive to restore blighted and shabby areas by developing neighborhood pride in cleaning up and improving a neighborhood. Without guidance by zoning and planning boards and civic officials, however, the Lake Charles Plan might actually create unplanned and unsightly additions to homes and accelerate rather than retard blight. In other words, the Lake Charles Plan can be a boon or a nuisance according to the leadership provided by local planning officials.



One of the local newspaper advertisements which helped to make the "Lake Charles Plan" effective.

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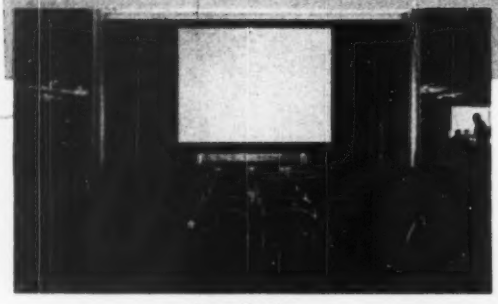

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Strong Enough to Stand On! Posture-Designed For Comfort! Saves 3 Ways!

YOU SAVE three ways when you buy Samson Folding Chairs—(1) in modest initial investment, (2) low upkeep and (3) longer life! Samson Chairs are first choice from coast to coast with churches, schools, hotels, business firms and institutions because—

They're comfort-curved—scientifically designed for maximum ease.

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ALSO MAKERS OF FAMOUS SAMSON FOLDAWAY FURNITURE FOR THE HOME AND SMART SAMSONITE LUGGAGE FOR TRAVEL

It Takes More Than a Pump

By S. T. ANDERSON
General Superintendent
City Water, Light and Power
Department
Springfield, Ill.

IN 1936 we believed that we had our water problems firmly under control. And actually we did—at that time. We had abandoned using a groundwater supply that came up through the limestone strata and was hard enough to make every housewife hate Mondays. We had built a beautiful new lake and had arranged to let the public use it for boating and swimming while we used it for a source of water. We had a new filter plant that turned out a soft, palatable water, a great contrast to the dissolved limestone that we formerly had to distribute. We had a low-service pumping station at the filter plant; and a high-service pumping station consisting of two centrifugal, motor-driven pumps rated at 10 mgd and 18 mgd respectively, and one steam-driven pump rated at 20 mgd.

Activities progressed in good shape until 1947 when the water pressure began to drop in the downtown area. We had two transmission mains at the time. One was 24 inches in diameter and the other was 30 inches. Our city hall tapped into the 24-inch main and even under this favorable condition, the pressure dropped to 34 pounds per square inch. Further downtown, the pressure dropped to the point of being dangerous.

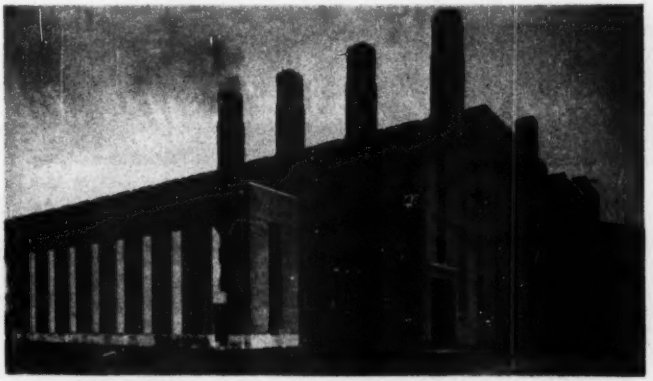
Why the Pump Order was Canceled

The obvious answer seemed to be more pumping capacity, and we were all set to install a new 20-mgd pump in order to crowd enough water into the mains to boost the pressure throughout the system to about 50 pounds per square inch. If we weren't getting enough water, what seemed simpler than merely to get enough equipment so that the proper amount would be delivered?

Our consulting engineers are Burns and McDonnell of Kansas City, Mo. W. G. Riddle, of this firm's staff, took the problem apart and came up with the conclusion that the added pumping capacity wasn't going to do much good. Manufacturer's rated capacity of a pump is one thing, but the amount of water delivered out of the end of a pipe with a pump on the other end can be quite another, depending on how small and how long the pipe is. His calculations showed that if we hooked the new pump to the present transmission system, we would have a firm capacity of only 22 mgd at 50 pounds per square inch. At the time, we needed enough water to meet a maximum hourly demand of 23½ mgd. In the reasonable future, we could anticipate a demand of 42 mgd. So pumping capacity was not the answer.

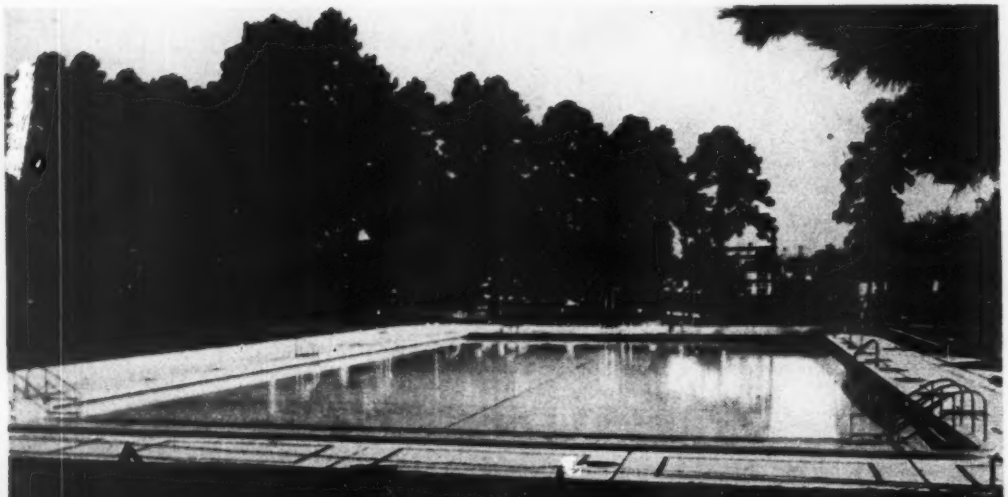
What we needed, instead, was a new transmission main. We needed pipes large enough so that the pumps would have a place to put the water that they wanted to deliver. A new 30-inch main, the figures showed, would step up our firm capacity from 20.6 mgd to 28 mgd without any pump. If we decided to install the pump, our firm capacity would jump to 40 mgd at the pressure needed.

So we are now in the process of building that third line. Actually, what we are building is a 36-inch main using American Cast Iron Pipe Company pipe and sectioning it with Mueller valves. When the growth of Springfield dictates, we will install that new big pump and our water-supply problems will be well under control.



Here is Springfield's power house and pumping station. The pumps are not required to work so hard now that the new transmission line is operating.

At the time this photograph was taken, the installation of the first section of Springfield's new 36-inch transmission main was nearing completion.



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It is available in two beautiful colors, Marine Blue and Pool Green; also in White. Write for descriptive folder giving full information.

- Made with a Rubber Base
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Outwears all other type paints

Will not chip, peel, check or fade. Resists caustic, chemicals and abrasion.

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STEELCOTE MFG. CO. GRATIOT at THERESA ST. LOUIS 3, MO.

AMA Takes Stand on Federal—Local Problems

Left to right: President, Mayor A. E. Cobo, Detroit, Mich.; Vice-President, Mayor William B. Hartsfield, Atlanta, Ga.; Past President, Mayor William F. Devin, Seattle, Wash.

THE ADOPTION OF several major resolutions was the big feature of the annual meeting of the American Municipal Association in Washington, D. C., December 10-12, attended by 350 municipal delegates and representatives of state leagues of municipalities. Among the leading topics of discussion were the economic problem of municipalities in 1951; the controlled materials plan; highway, traffic, and parking problems; payments in lieu of taxes on federal property, and lessons from the 1951 floods.

In the newly adopted comprehensive statement of policy on highways, traffic, and parking, the Association pointed out that although more than half of the vehicle mileage is on urban streets, expensive to build and maintain, the cities are not receiving their fair share of motor-vehicle revenues from state or federal sources. Specific local and intergovernmental action was recommended to cope with the current crisis.

In his presidential address, Mayor William F. Devin of Seattle pointed especially to the need for municipal officials to recognize and deal more effectively with the broad area of problems he lumped under "public safety," including accidents, traffic fatalities, crime, and preventable communicable disease.

Herbert J. Bingham, executive secretary of the Tennessee Municipal League, presented a report of the AMA Committee on Citizen Interest and Participation in Municipal Government, which stressed the importance of municipal public-relations techniques on a sustained, continuing basis as a means of restoring public confidence in government in general, including local government.

New Officers and Resolutions

Mayor Albert E. Cobo of Detroit was elected President of the Association to succeed Mayor Devin. Atlanta's Mayor, William B. Hartsfield, was elected Vice-President. Named to two-year terms on the Board of Trustees were Mr. Bingham; Mayor Fletcher Bowron, Los Angeles, Phil Hamburger, City Councilman of Houston; Herman Kehrli, Executive Secretary of the League of Oregon Cities; Mrs. Davetta L. Steed, Executive Secretary of the League of North Carolina Municipalities, and Mayor Frank Zeidler of Milwaukee.

Among the major resolutions were those:

Requesting Congress to propose necessary legislation to halt any further inflation; asking Congress to allocate to indispensable local-government services a proportion of national production adequate to meet needs of efficient defense production;

Urging elimination of the Social Security Act provision which now prohibits integration of existing public retirement systems with Social Security; opposition to lifting present restrictions on transportation of explosives or highly flammable materials pending further study by government agencies concerned;

Selection of an interim committee to study metropolitan problems caused by recommended dispersal of industry and people; encouragement of national and state legislation designed to sort out the domains of federal, state, and local governments, particularly with a view to overcoming the preempting of tax sources by the federal and state governments to the grave disadvantage of local governments;

Establishment of adequate pay scales to attract the best brains into municipal service, high requirements for new municipal employees, and provision of proper in-service training facilities; arrangement of a special conference on mass transit in cities; request for the resumption of publication of a census of governments; expansion of federal-aid airport funds to match the programs of municipalities; and a strong recommendation for complete study and survey of radio and television facilities to encourage their use for cultural, civic, and governmental improvements, so that they will not be monopolized by commercial interests and so that they will be available at reasonable rates and popular listening times for such programs.

AMA Adopts Clear-Cut Resolution on Civil Defense

RESOLVED that the American Municipal Association hereby reaffirms its position on civil defense and expresses its grave disappointment over the failure of Congress to recognize that civil defense of the cities is a vital part of national defense, which failure has resulted in the lack of adequate financial support to meet even the minimum needs of the cities for supplies, communications, equipment, and shelters, and that the Congress be urged to make available immediately adequate funds which are necessary since local governments without federal and state aid cannot provide effective defense systems.

RESOLVED that the American Municipal Association express its thanks to the Federal Civil Defense Administration for its earnest support of local government within the limits of its available resources.

RESOLVED FURTHER that the American Municipal Association urge the cities of the United States to forge ahead with their own programs, to exchange information among themselves on the progress of their work, to create mutual defense arrangements, to organize mobile battalions and to do all within their power to establish fully operative civil-defense organizations both in the short run and long run.

RESOLVED also that the American Municipal Association call upon the citizens of the nation to support their civil-defense organizations without waiting for any leadership other than that which they develop out of their own strengths.

Photos: Courtesy Dayton Power & Light Co.

WHEN DAYTON, OHIO authorities decided to improve street lighting in the downtown business section (including 10 of the city's main thoroughfares) they installed some 600 Holophane REFRACTORS No. 4070 in General Electric Form-109 Luminaires, using the 400 Watt EH-1 Mercury lamp. The old system produced 0.76 footcandles as compared to the new system's 3.0 footcandles . . . The result—

4 TIMES MORE ILLUMINATION!

Holophane engineers will send you, without obligation, engineering data on street lighting requirements in your community.

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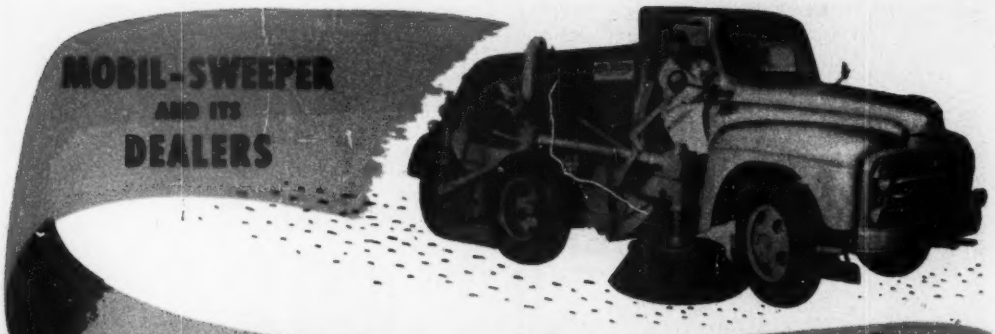
HOLOPHANE COMPANY, INC.

Lighting Authorities Since 1898 · STREET LIGHTING DEPARTMENT, NEWARK, OHIO

THE HOLOPHANE COMPANY, LTD., THE QUEENSWAY, TORONTO 18, ONTARIO



THANK THE PUBLIC OFFICIALS
148 MOBIL-SWEEPERS ORDERED & DELIVERED IN 1951

Mobil-Sweeper's Family of Dealers Extend Greetings For 1952

and advises early purchases of your anticipated requirements for street sweeping equipment because materials control can quickly alter production and delivery schedules.

Your sweeping budget will go farther when your city is equipped with Mobil-Sweepers. Operating under all conditions, Mobil-Sweeper is *unexcelled* in sweeping ability. Add to this the extra advantages of lower maintenance plus greater safety to drivers and you know why there's an ever-increasing demand for this sweeper.

CONSIDER ALL THE SAVINGS—Whether you use the central dumping system or haul refuse directly to the dump, Mobil-Sweeper's extra speed (travels at top legal speeds when not sweeping) reduces "dead-heading" time between sweeping area and dump. Less time is spent traveling from service yard to sweeping area.

LOWER MAINTENANCE COSTS—Because Mobil-Sweeper is built on a modified International Harvester Truck chassis, your regular maintenance methods and equipment for trucks is applicable to this sweeper. Here is a major saving in upkeep and your costs are materially reduced on specially designed parts and tools.

WHY A SAFER SWEEPER PAYS OFF—Even a slight injury is costly. That's why Mobil-Sweeper provides a heavy steel cab on every sweeper. The driver is protected from low hanging branches...he's protected by shatterproof windshields in accordance with safe driving methods. Visibility is better—no blind spots out front. Four-wheel hydraulic brakes assure safe stops even when sweeper is fully loaded. And all-weather comfort is afforded by the cab.

MOBIL-SWEEPER IS EASY TO MANEUVER—For effective sweeping, no full-size sweeper will out-maneuver a Mobil-Sweeper. It gets in and around parked cars with complete ease and clean sweeping... sweeps clean on sharp curb returns, up and down hills.

Your Community Will Find Mobil-Sweeper Best All Ways!

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DIVISION OF
THE CONVEYOR CO
3260 E. SLAUSON AVENUE
LOS ANGELES 58, CALIF.

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THE CONVEYOR COMPANY
3260 East Slauson Avenue, Los Angeles 58, Calif. AC-12

Gentlemen:
Please send catalog with complete details and specifications for the Mobil-Sweeper.

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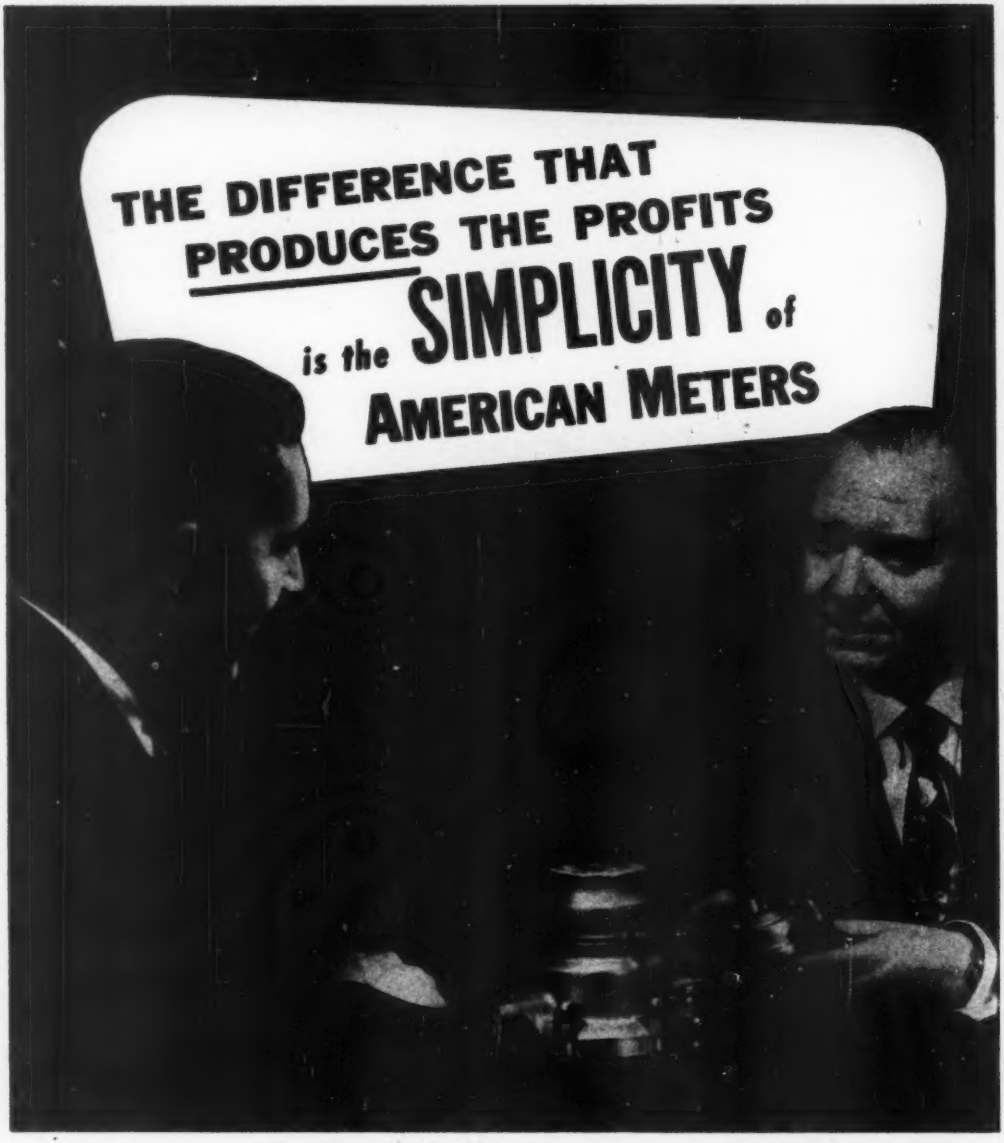
Address _____ City _____

County _____ State _____



● Most makes of Water Meters look similar, are made of the same materials, are priced competitively and are claimed to provide the same accuracy. What, then, are the differences? What values are outstanding?

American Meters stand out as the most exceptional value because of simplicity of design—fewer parts, simpler castings. This simplicity provides long life, quick easy repair. Only a small stock of interchangeable parts are needed to keep these meters producing. These benefits mean low cost efficient operation of the water department.

Ask for complete data.

BUFFALO METER CO.

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what can't Aerial Mapping do?

It's Saving Lots of Time and Money for Busy Engineers in Many New Ways . . .

Newest of A.E.C. Facilities at Aiken, S. C.

Here's how and where:

Busy engineers—now pressed for time and manpower—find air mapping can do many jobs for them . . . quickly, economically, dependably.

AERO mapping can produce topographic maps for an area 210,000 acres big in 160 days (for a new Atomic Energy facility).

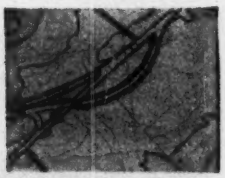
Or—it can tally a stockpile (coal, minerals, logs) as small as 6 acres.

Sharan Guides Mapping Plane

It can map a whole vast area (83,000 square miles in the Bahamas, for instance) where no landmarks exist—and guide the mapping plane with the new positioning device, Shoran. Similarly, it can cover the trackless jungle.

It delivers resource inventories for big areas (such as Portuguese East Africa, western Canada) . . . development mapping (Middle East, Minnesota) . . . and produces highway design and location maps (for instance, New York, Washington, Virginia) in a fraction of the time of plane table surveys.

Checking Resource Inventory Data



Penna. Turnpike Location Map

Lower Manhattan Seen from the Air

It maps cities (New York, Durham, North Carolina, Eastlake, Ohio and others) for Civil Defense and city planning; it makes timber tallies (Canada, Louisiana, Maine); it produces geologic studies (Pennsylvania, Wyoming, Venezuela, Tunisia, Union of South Africa) for oil and mining companies. It locates railroads, power lines, pipe lines, (Alaska, Minnesota, Maryland).

Photomap and Aeromagnetics Aid Geologic Study

AERO is doing all of these things!

If you are planning for the mapping of any large area, let AERO's photogrammetric engineers bring 32 years of world-wide mapping experience to your conference table. They know air mapping's applications; they understand engineering problems. They are a part of a 300-man organization whose business is working with engineers to produce dependable maps for specific engineering problems.

AERO *can fulfill all your mapping requirements . . . usually at half the cost and time of ground surveys.* **Write AERO today.**

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PHILADELPHIA 20, PENNSYLVANIA
Oldest Flying Corporation in the World

New York City Establishes Watershed Patrol

NEW YORK CITY'S watersheds, which extend from the Bronx to the Catskills, and are the source of the city's water supply, are now under the round-the-clock protection of a force of 151 armed guards who patrol the area in 24 Jeep station wagons equipped with two-way General Electric 30-watt radios. Three fixed stations will coordinate the work of the mobile radios.

Mayor Impellitteri tests a short-wave radio installed in one of the patrol wagons.

Developed After Survey

The watershed patrol was developed after a survey by the First Army Headquarters Command. The guards have received special training both in the New York City Police Academy and by engineers in the Department of Water Supply, Gas and Electricity. The police training gave them fundamentals in understanding how they can perform an arrest, how to approach and handle a troublesome situation when violence might arise, what their rights as police officers are, and how to detect sabotage. The engineering training was aimed at giving them an understanding of the vulnerability of various portions of the water-supply system to sabotage or direct enemy action.

The guards will maintain a continuous patrol of the watersheds, visiting reservoirs, aqueducts, and pumping stations. They also will have available two mobile field laboratories. These are self-sufficient units designed for use in routine and emergency servicing of the New York City water-supply system. They are equipped for the rapid and flexible conduct of pertinent laboratory investigations in the field. Special time-saving techniques are used, some of which yield the required information in a matter of seconds. In addition to routine and special situations, they are prepared to handle warfare as well as sabotage situations.

Mayor Vincent Impellitteri is shown here attending a review of New York City's new watershed-patrol force. Left to right are Anthony DiPaola, First Deputy Commissioner of Water, Gas and Electricity; Edward Matera, Captain of the Patrol Force; Mayor Impellitteri, and Commissioner Dominick F. Paduano.

Patrol a Part of City Civil Defense

Purchase of these new vehicles and employment of the armed guards by the Department of Water Supply, Gas and Electricity, is a part of the city's civil-defense program, directed by Arthur Wallender. Dominick F. Paduano is Commissioner of Water Supply, Gas and Electricity. The police training for the guards was made possible through the cooperation of Police Commissioner George P. Monaghan.

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Machines Speed County's 40,000 Tax Bills

The system and the machines, says the author, have facilitated getting the tax rolls to the Tax Collector promptly, neatly, and correctly.

By CLARKE GRAY
Auditor
Ventura County, Calif.

THE County of Ventura, Calif., felt the need for speedier and more accurate preparation of the assessment rolls and the tax rolls. Three years ago the valuations were hand written on the assessment rolls, and taxes were extended by calculating machines and added across and vertically on each sheet by adding machines. The volume of drudgery, including pen and ink extension of the tax roll, is suggested by the fact that there were more than 40,000 bills and 100,000 extensions. This operation called for 15 employees and the rental of additional calculators and adding machines. The use of several different tax rates for different districts further complicated the extensions.

Accounting Machines Necessary

Obviously this method was cumbersome, troublesome, used too many people, and took too much time. Briefly, it was old fashioned. The growing number of parcels, the complications of different tax rates, and as many as three different special assessments to be correctly applied, impressed me with the necessity for finding a satisfactory modern method. After making a survey of mechanized systems we decided to purchase three Underwood Sundstrand tax-billing machines.

The tax job is now performed in two parts. First, the assessment roll is made by the County Assessor. Names, addresses, and property descriptions are printed by Addressograph. Land value and value of improvements are set up by the 10-key Underwood Sundstrand keyboard, and printed and sub-totaled on the assessment roll. Following this, on the same line of posting, there are entered the personal-property valuation and the amount of exemptions. The machine then automatically prints the taxable value of the account. Upon completion of the sheets, the machine prints the total of each of the following: value of land, improvements, land and improvements combined, personal property, exemption, and total taxable property. Two machines are used for making these records.

The completed assessment rolls are audited by the County Auditor. Upon adoption of the yearly budget and the setting of the tax rates, the machines are used by the Auditor for figuring the taxes and making the extensions. The equipment is so constructed that it is a simple matter for the operator to set up in the machine the several tax rates as needed.

Because Ventura County often puts several parcels on the same bill, the tax bills are not produced in the same operation that extends the taxes on the tax rolls.

The new system and the machines have greatly improved our efficiency and have facilitated getting the tax rolls to the Tax Collector more promptly, in neater form, with a greater degree of accuracy, and with fewer people involved in the operation. Eight employees complete the entire job in much less time than was required by the old system. After completion of the tax rolls, one of the machines is used by the County Tax Collector in making a record of taxes paid for each district and for figuring the outstanding taxes that are due from residents in each of the districts.

To Improve Accounting In Council Bluffs, Iowa

RECOGNIZING that any job can be done better, and in preparation for our changeover to a modern double-entry system on January 1, nine of our financial officials have been meeting each Wednesday for discussion of the principles and methods recommended in *Municipal and Governmental Accounting*, by Chatters and Tenner. These meetings began November 14 and will continue until March 22.

We are taking an hour's time out of each work week for these discussions because we are confident that the development of better methods, and facility in their use, will yield the city a substantial return in prompt, well-organized financial statements, fully effective collections, elimination of duplication of work, and more accurate cost accounting. The subjects for the 20 weeks are as follows:

Essential Principles of Governmental Accounting
Classification of Revenue and Expenditure Accounts
Budgeting
The General Fund Balance Sheet
General Fund Revenues
General Fund Expenditures
Bond Funds
Sinking Funds
Working Capital Funds
Special Assessment Funds
Trust and Agency Funds
Utility Funds
Utility Revenues and Expenditures
General Fixed Assets, General Bonded Debt, and Inter-fund Relationships
Investments
General Property Taxes
Fixed Assets
Liabilities
Cost Accounting
Financial Reports

OLIVER COMSTOCK
City Manager
Council Bluffs, Iowa

The New Ashton BOOM TRUCK AND WRECKER COMBINATION

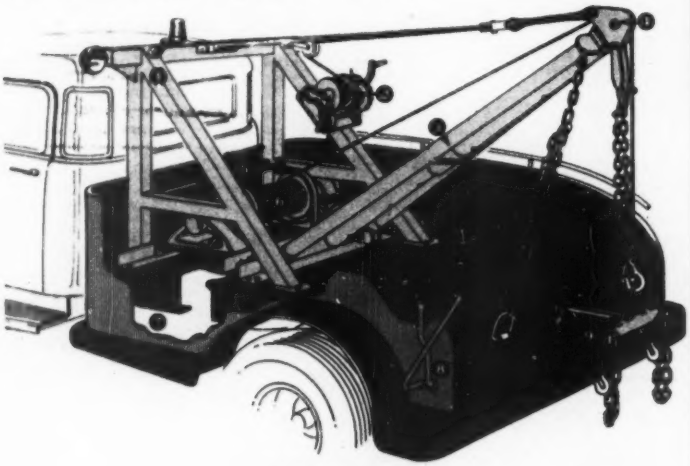
AMERICA'S MOST VERSATILE POWER WRECKER

Here is an automotive unit which efficiently serves the dual purpose of a power wrecker of advanced design and is rated high as a mobile crane or boom truck. For ordinary wrecking work, towing or retrieving cars or trucks that are off the highway, in deep ditches, etc., the extension boom quickly recovers any wreck without complicated rigging.

Radically improved functional design retains all the basic features needed for wrecking operations—*Plus* the extension boom which multiplies the usefulness and operating range of the unit.

The Ashton EXB 19-51 extension boom wrecker constitutes an all purpose, one-man power unit that fully meets the constant demand for speed and economy in countless municipal jobs.

Get the facts and you will get an Ashton.

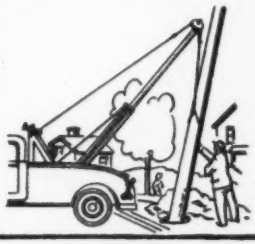


FEATURES

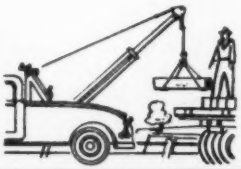
1. **Solid "A" Frame** of heavy structural steel, all-welded, gives maximum strength.
2. **Hand Winch,** 2 Ton Cap. Ratio 4 to 1, 22 to 1. Lifts the boom with 6 ton load.
3. **Extension Boom** (patented) adjustable to six positions. Normal to a maximum boom length of 14 ft.
4. **Boom Head Assembly.** New Ashton design (patented). Self-aligning head swings on a 120° arc.
5. **Cable Guard** to prevent cable crossing drum flanges. (opt. at extra cost)
6. **Power Winch,** 7½ Tons safe load. Worm and gear drive. Free reeling clutch control. Automatic brake. H. D. reversable power take-off and drive.
7. **Body,** Ashton streamline design. All-steel all-welded. *Standard* Model, length 96" inside width 68". Extended fenders and running boards. Hand rails; floor, heavy safety tread steel plate, *Special* body width 92" or over, Flush sides, Recessed steps.
8. **Remote Control Levers** for clutch and power take-off.
9. **Spacer and lift bar** Ashton design, provides rigid towing connection, prevents lash or side sway.

USE TRUCK ENGINE POWER TO INSTALL OR REMOVE HYDRANTS

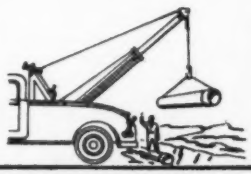
—OR FOR FASTER POLE SETTING



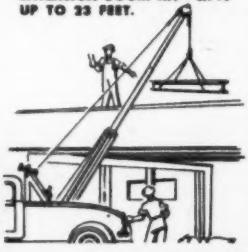
—EASIER HANDLING OF CURB STONE, SLABS, CATCH BASINS, ETC.



—UNLOAD AND PLACE SEWERS OR WATER PIPE



—AND FOR EXTRA HIGH LIFTING JOBS THERE IS A SPECIAL EXTENSION BOOM KIT—LIFTS UP TO 23 FEET.



Ashton POWER WRECKER EQUIPMENT CO., INC.

1701 W LAFAYETTE AVE DETROIT 16 MICHIGAN

The Municipal Bond Market

Representative Municipal Bond Sales
December 3-13, 1951

Date of Sale		*Amount*	*Purpose*	*Average Maturity (Years)*	*Net Interest Cost Per Cent*
12- 3	Davidson Co., Tenn.	$ 500,000	Farmers' Market	14-5/6	1.80
12- 4	Wyandotte, Mich.	300,000	Parking Revenue	11-5/6	2.8506
12- 5	Evansville School City, Ind.	525,000	School	8-1/2	1.4586
12-11	Norfolk, Va.	6,500,000	Water	13	2.0907
12-12	Arlington Co., Va.	2,700,000	Various Imp.	13-2/3	2.129
12-12	Indianapolis, Ind.	3,250,000	Sewer	16-1/2	1.782
12-12	Kankakee, Ill.	515,000	Parking Revenue	15-2/3	3.1132
12-12	Knox County, Tenn.	1,250,000	School	12-5/6	2.49
12-13	Louisville, Ky.	6,000,000	Street and Expressway	23-1/3	1.995
12-12	Marathon Co., Wis.	500,000	Courthouse	10-1/2	1.62
12-12	Sacramento City Unified School District, Calif.	2,750,000	School	13-1/6	1.767
12-13	Berea City School Dist., Ohio	1,725,000	School	11-1/4	3.1099
12-13	Port Arthur Independent School District, Texas	1,250,000	School	12-5/6	2.49

Industrial Plants, Parking Systems, Bonus Bonds, Housing Authorities, Public Utility Districts

THE issuance by cities of bonds to finance industrial plants, which are then leased to private corporations, is one of the most important recent developments in the municipal bond market. A number of states now permit issuance of such bonds, and several issues have already been sold. The president of Textron Incorporated, which has already contracted to lease more than one plant so financed, recently stated that "This method of plant financing is sound from the point of view of everyone concerned—industry, community, and Federal Government." Taking another point of view, the Investment Bankers Association of America, at its recent convention, adopted a resolution condemning the practice. The matter is of such concern to all interested in municipal finance that it will be discussed in more detail in an early issue of this magazine.

* * *

In December two more cities—Kankakee, Ill., and Wyandotte, Mich.—issued revenue bonds to finance an automobile parking system. Michigan cities have pioneered in this type of financing, and there are now nine cities in the state, of which the largest are Grand Rapids and Dearborn, which have sold parking revenue bonds. Several other Michigan cities plan to market such bonds in the near future.

By CATHERINE CLARK
Municipal Service Department
Dun and Bradstreet, Inc.
New York, N. Y.

A new chapter in the story of West Virginia's bonus bonds was written early in December. The story began at the general election in November 1950, when the voters of the state approved the issuance of $90,000,000 Soldier Bonus bonds. Later the Investment Banking Voluntary Credit Restraint Committee refused to approve the issue, as being inflationary, and when the state offered $67,500,000 of the bonds for sale on May 23, 1951, not a single bid was received. The state, considering it had a mandate from the voters to issue the bonds, cast about for alternative means of financing. On December 3, 1951, $37,500,000 of the bonds were offered for public subscription. On the first day, nearly half of this amount was subscribed, $13,500,000 being taken by West Virginia banks, $4,233,000 by state corporations, and the balance by private investors and out-of-state purchasers. Second-day purchases were understood to have raised total sales to over $25,000,000.

The third offering of housing authority bonds to be issued under the Housing Act of 1949 will be offered for sale on January 15, 1952, the Public Housing Administration has announced. It is expected that between 30 and 35 separate issues will be offered. The aggregate amount will be something less than $150,000,000, and with the $171,319,000 housing authority bonds sold in July and the $162,787,000 sold in October, will bring to approximately $480,000,000 the financing done under the 1949 Housing Act.

* * *

Another important piece of municipal financing expected early in 1952, but probably not before March 1, is the issuance of some $115,000,000 bonds by seven Public Utility Districts of the State of Washington to finance purchase of the Puget Sound Power and Light Company. According to a December 3, 1951, report in the *Daily Bond Buyer*, "When the transaction is completed, each of the seven districts will individually own the distribution properties of the Puget company located in their respective territories," as well as an equal share and undivided interest in the integrated generating and transmission system of the Puget and the distribution properties in the service area which is not within any organized area. In March 1951 the City of Seattle acquired by purchase, for approximately $27,000,000, the properties of the Puget Sound Power and Light Company in the city and suburban area of Seattle.

The municipal bond market has been relatively stable in recent weeks, with the *Bond Buyer*'s index of the yield on 20 municipal bonds hovering around 2.07%. New bond issues have, in general, been fairly well received, but unsold balances of older issues have encountered some buyer resistance.

Research Bureau Directors Get Philadelphia Posts

THE important position of Managing Director and Finance Director for Philadelphia under its new city charter* are being filled by two former executive directors of the Bureau of Municipal Research, a non-profit, citizens' organization which has been influential in calling attention to needed reforms in city government.

Lennox L. Moak, resigning from the Research Bureau's executive directorship, has been named as Finance Director under the incoming administration of Mayor-elect Joseph S. Clark, Jr., Democrat. Col. Robert K. Sawyer, who held the job of executive director of the research group before Mr. Moak, will serve as Managing Director in Mr. Clark's cabinet.

*See "Unique Charter Proposed for Philadelphia," p. 118, April 1951 issue, THE AMERICAN CITY.

HYDROCRANE

S-t-r-e-t-c-h-e-s Day's Output From 75 to 400 ft. Of Pipe Per Man

Here Whittier's H-2 sets water main on a busy street. Note how easily this compact crane works under overhanging wires. Operation is particularly smooth with every work function fully hydraulic.

"We've put our Hydrocrane to work with a 5-man crew and averaged setting 2,000 ft. of 6-in. cast iron pipe (caulked) in an 8-hour day — the best an 8-man crew did without the Hydrocrane was 600 ft. a day," states M. R. Bowen, Director of Public Works, Whittier, Calif. "What's more, on one job, 5 of my boys and our H-2 set 1,100 ft. of 6-in. (not caulked) in two hours. Often the Hydrocrane is slowed up because ditching rigs don't move fast enough."

NEW JOBS ALL THE TIME

"This machine fulfills all our expectations on pipe work — and is finding use on new jobs all the time," Bowen added. Digging house connections is one example. Previously these were hand dug — now the Hydrocrane handles the complete job except pavement breaking — excavating, setting pipe, backfilling — saves at least 50% in labor.

SHUT-OFFS SHORTER — SERVICE BETTER

The Hydrocrane also handles water main leak repairs. While it saves labor here too, the big advantage is speed. With this fast traveling, hard digging unit, mains are repaired and back in service far faster than ever before. Other Hydrocrane jobs include unloading and stockpiling pipe, moving equipment, hauling materials and for miscellaneous excavation.

"Never thought we'd keep her so busy" — this is a typical comment by municipal users. Convince yourself. Write now. Two sizes — ¼-yd. 2-ton, ⅜-yd. 3-ton. Attachments include clamshell, crane hook, material-handling and catch basin buckets, grapples, magnet.

142H51

SOUTH MILWAUKEE BUCYRUS-ERIE HYDROCRANE WISCONSIN

NEW! Bucyrus-Erie Hydrohoe

• Two separate digging actions • No bails, sheave blocks or drag ropes to interfere with loading • Digs a level trench — reduces hand trimming, no scallops • Hydraulic ejector assures fast, clean dumping of dipper • Every work function fully hydraulic.

Zoning and Planning Notes

Edited by NORMAN WILLIAMS, Jr.

Acreage Zoning — Comprehensive Plan

MISSOURI. *Flora Realty and Investment Company* v. *City of Ladue*, South Western (2d) (Supreme Court, 1951).

In this case three-acre residential-zoning regulations in a wealthy suburb of St. Louis were challenged by a realty company which desired to subdivide a 100-acre rolling tract of land into ¾-acre lots, or to sell the tract for institutional use. The latter was permitted only by a special permit. Both sides presented conflicting evidence on the existing conditions in the vicinity and on the effect of the three-acre restriction on property values, and on the traffic loads on near-by roads and the need for fire and police protection and for schools. The provision in question was part of a comprehensive zoning plan prepared by the Harland Bartholomew organization.

The long opinion consists largely of extended and repetitious extracts from the pleadings and evidence—a practice not uncommon in Missouri opinions. However, the regulation was finally upheld, primarily because it was part of a comprehensive plan. The court rejected, without analysis, the argument that the ordinance represented an attempt to segregate economic classes by zoning.

The regulations upheld here require larger lots than those involved in any other recent acreage-zoning case. The recognition that the validity of a zoning regulation is very much strengthened if such regulation is part of a comprehensive plan is, of course, welcome. However, a bit more analysis of the purpose and effect of these regulations in terms of the fundamental goals of zoning would be useful.

Residential Zoning Invalid In Heavy Industrial Area

OHIO. *Loesch Allotment Company* v. *Village of Newburgh Heights*, 100 North Eastern (2d) 543 (Common Pleas, July 31, 1950).

A tract was subdivided in 1913 and some lots were sold and developed with residences during the next few years. However, subsequently there was substantial industrial development in the vicinity, and also across the municipal boundary within the City of Cleveland. Nevertheless, the zoning ordinance passed in 1947 placed part of the area in a residential zone. When these restrictions were challenged in connection with a proposal to build a railroad spur for a factory, the Court held that the regulations were unreasonable and invalid.

The ordinance in question does not promote the public health, safety or welfare of the community by requiring lands in the midst of a heavy industrial area, lacking pavement and utilities, in part used as a public dump and elsewhere traversed by a creek into which raw sewage is emptied, to be used for residential or commercial purposes.

Prohibition of Billboards Along Freeways In Los Angeles

The City of Los Angeles has an extensive freeway construction program, with 165 miles planned for the next 20 years, and 42 miles already completed or under construction. Because of the enormous amount of automotive driving in Los Angeles, locations in view of the freeways are naturally prized for outdoor advertising. After the refusal of a request to cut down a tree which blocked the view of a billboard from a parkway, vandals secretly cut down the tree, and later several other trees. As a result of the agitation which followed, the state authorities refused to do any landscaping along new freeways unless local legislation prohibited billboards along the rights of way, and the City of Los Angeles adopted a series of controls over signs along freeways.

Under the new ordinance, if any sign would be located within 500 feet of the well-traveled road or freeway, the application to build such a sign would be referred to two city agencies. If the Board of Building and Safety Commissioners determines that the advertisement would be maintained primarily to be viewed from the freeway, the permit would be denied. If not, the application is also referred to the Board of Traffic and Engineering Commissioners to see if the sign would be a hazard to the operation of vehicles on the freeway. Existing signs which are similarly located are required to go through the same procedure within three years. Various exceptions are made for small business signs, which advertise businesses located on the premises.

Single-Family Zoning— Comprehensive Plan

NEW JERSEY. *Birkfeld Realty Co.* v. *Board of Commissioners of City of Orange*, 79 Atlantic (2d) 326 (Appellate Division, March 6, 1951).

The City of Orange is divided roughly in half by Central Avenue, a main east-west thoroughfare. North of this avenue, according to this opinion, "is a striking example of the baneful consequences of planless growth and haphazard development." The southern half of the city is mostly developed with one-family residences, many old but some new, and is largely zoned for such use. Along South Center Street, an important north-south street, several tracts have recently been rezoned for garden apartments, mostly just below Central Avenue. The Planning Board recommended that the rest of South Center Street should be retained as a one-family area.

The Court held that the new New Jersey Zoning Enabling Act intended to give great weight to the recommendations of the local planning boards on zoning changes, and upheld the one-family zoning on this basis.

Phoenix Gets New Municipal Code

A NEW municipal code has just been published by the City of Phoenix, Ariz. The 1951 codification represents the first compilation of Phoenix ordinances since 1939, and is the first code adopted as a whole under a law passed by the Arizona Legislature in its last session which authorizes municipalities to adopt codes by reference. A great deal of revising of ordinances was done by the staff of the City Attorney, and then the work was turned over to Michie City Publications Company, of Charlottesville, Va., specialists in city codes, who did the editorial work and indexing.

The book contains a history of the City of Phoenix written by Barry M. Goldwater, Councilman, with the collaboration of of James M. Barney, who wrote the previous history; a Charter, the Civil Service Law, the Administrative Code, and general ordinances which in themselves consist of 39 chapters arranged in alphabetical order. The new volume is both cross-indexed and footnoted with proper reference to state law whenever applicable.

The printing was done by McGrew Commercial Printery, Phoenix, and the binding was done by the Arizona Trade Bindery, Phoenix.

Copies of the code may be purchased at the office of the City Clerk for $5 each, but City Manager Ray W. Wilson reports that he will be glad to exchange the Phoenix Code with other cities for comparable volumes.

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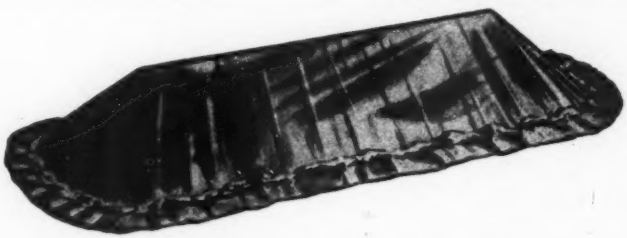

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Legal Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS
Charles S. Rhyne, General Counsel

Advertising Tax—Constitutionality

In action for declaratory judgment to determine validity of statute establishing advertising-tax districts and authorizing special tax for purpose of advertising advantages and facilities in taxing districts, held an advertising tax for state, county, or municipal purposes may be lawfully imposed. *Miller et al. v. Ryan et al.*, 54 So. (2d) 60 (Fla., Aug. 10, 1951).

Bonds—Issuance by City for Construction of Building for Lease to Private Corporation

In action for declaratory judgment to determine validity of statute authorizing issuance of industrial-building revenue bonds for purchase of site and construction of building for lease to private corporations, held that statute did not authorize expenditure of public funds for private purpose nor extension of credit to private corporations without approval of voters. *Holly v. City of Elizabethton*, 241 S. W. (2d) 1001 (Tenn., Aug. 31, 1951).

Bridge—City Liability for Death Caused by Faulty Storm Drain Under

In action against city for wrongful death occurring when deceased was swept from bridge and drowned by storm waters, held evidence that city had notice of faulty condition of storm drain under bridge was sufficient to sustain jury's verdict. *Parcher v. City of Los Angeles*, 235 Pac. (2d) 220 (Calif. App., Aug. 31, 1951).

City Council—Effect of Vacancies In Determining a Quorum

In action against city to determine whether two members of council could constitute a quorum for the transaction of official business, held that where village charter provided for a council of five members, a majority being necessary for a quorum, the vacancies created could not be deducted in ascertaining a quorum. *Clark v. North Bay Village*, 54 So. (2d) 240 (Fla., Aug. 24, 1951).

City Funds—Borrowing Money in Anticipation of Taxes

In action to determine validity of resolution of City Council of Pawtucket authorizing city to borrow money in anticipation of taxes, held that since no private injury was alleged court had no jurisdiction to determine validity of ordinance and that mayor was not proper party to contest its validity. *McCarthy v. McAloon et al.*, 83 Atl. (2d) 75 (R. I., Aug. 13, 1951).

Civil Rights Act

In action against city and another to recover damages for infringement of plaintiff's civil rights, held that complaint which alleged a conspiracy between individual defendant and police officers of city existed to extract money from innocent motorists by subjecting them to unlawful arrests, and that plaintiff was unlawfully arrested pursuant to such conspiracy, did not state cause of action under Civil Rights Act against either defendant within jurisdiction of federal courts. *Charlton v. City of Hialeah*, 188 Fed. (2d) 421 (U. S. C. A. 5th, April 20, 1951).

Fire Hydrants and Water Mains—City Liability for Clogged Condition—Public Liability Act

In action against city for damages sustained when house and personal property were partially destroyed by fire because of alleged clogged condition of fire hydrant and water lines, held that fire mains and hydrants were public works or property and complaint stated cause of action under Public Liability Act. *Stang v. City of Mill Valley*, 234 Pac. (2d) 1015 (Calif. App., Aug. 21, 1951).

Firemen—Contributory Negligence Of Firemen Bars Recovery by City

In action by city to recover for damages to fire truck and injury to firemen, held that driver of fire truck was contributorily negligent barring recovery by city. *City of Kalamazoo v. Priest*, 49 N. W. (2d) 32 (Mich., Sept. 5, 1951).

Football Injury—City Liability for

In action against city to recover for medical expenses incurred in treatment of injury received in football game, held that evidence sustained finding that no representation had been made to plaintiff that he was insured against all injuries. *Esposito v. City of New Haven*, 82 Atl. (2d) 806 (Conn., July 17, 1951).

Hospital—Operation of Government Function

In action against city for damages for death of plaintiff's wife while a patient in hospital operated by city and county, held that operation of the hospital was governmental function and defendants were not liable for injury caused by negligent acts of hospital employee. *Madison v. City and County of San Francisco*, 234 Pac. (2d) 995 (Calif. App., Aug. 22, 1951).

Licenses—Pinball Machines—Validity—City-State

In action by taxpayer to enjoin municipality from enforcing ordinance requiring licenses for pinball machines used exclusively for amusement purposes on ground that ordinance licensed gambling machines in violation of statute prohibiting operation of gaming devices, held ordinance was not contrary to general laws of state. *Wells v. City of Norwood*, 100 N. E. (2d) 711 (Ohio Com. Pleas, Sept. 21, 1951).

Lien for Labor and Material On City Property

In action against city to foreclose mechanics' lien on realty acquired by city in trust for use of public as museum of hobbies, held such property not subject to mechanics' lien for labor and material furnished for purpose of reconditioning plumbing in trust property, but that plumber may recover on quantum meruit upon showing of valid contract with city to furnish such labor and material. *City of St. Augustine v. Brooks*, 54 So. (2d) 196 (Fla., Oct. 9, 1951).

Parking Area Leased by City—Validity

In action to determine validity of lease of parking areas at an annual rental for thirty-year period executed by parking authority to city, held that contracts were valid. *De Lorenzo v. City of Hackensack*, 83 Atl. (2d) 374 (N. J. Super. Ct., Sept. 14, 1951).

Parking—Loading Zones Restricted To Commercial Vehicles—Validity

In appeal from conviction of parking in a loading zone reserved for commercial vehicles, held that ordinance of Oklahoma City allowing commercial vehicles only to park in loading zones was a reasonable exercise of the police power granted city by state. *Hirsh v. Oklahoma City*, 234 Pac. (2d) 925 (Okla. App., July 18, 1951).

Parks—Public Address to Religious Meetings—Validity of Ordinance Prohibiting

In appeal from conviction of making a public address to a religious meeting in a public park in violation of an ordinance of the City of Pawtucket, held that ordinance was valid exercise of police power. *State v. Fowler*, 83 Atl. (2d) 67 (R. I., Aug. 10, 1951).

Policemen—Obligation of City to Furnish Legal Services in Defense Of False Arrest Suit

In action to determine whether city was required to furnish legal services for policeman in defense of an action charging false arrest, held under charter city had no such obligation and city was not an interested party within meaning of charter provision requiring city counselor to represent city in all legal matters and proceedings. *Roberts v. City of St. Louis*, 242 S. W. (2d) 293 (Mo. App., Sept. 11, 1951).

Rock Quarry as Nuisance—Imminent Injury Necessary

In action to enjoin city from operating rock quarry and from using explosives, held injunction properly denied because danger of anticipated damage was not sufficiently imminent. *Turner v. City of Spokane*, 235 Pac. (2d) 300 (Wash., Sept. 6, 1951).

Signs in City Parks—Blanket Prohibition Unconstitutional

In appeal from conviction of violating rule prohibiting display of any sign in city parks, held that rule was unconstitutional as an infringement of free speech in violation of the 14th amendment. *Commonwealth v. Dubin*, 100 N. E. (2d) 843 (Mass., Sept. 12, 1951).

Signs in Filling Stations—Ordinance Prohibiting—Validity

In action to test validity of ordinance prohibiting signs or placards stating price of gasoline unless of size 12 by 12 inches attached to pumps or dispensing devices, held ordinance was invalid as bearing no reasonable relation to public welfare. *Levy v. City of Pontiac*, 49 N. W. (2d) 80 (Mich., Sept. 5, 1951).

Taxation—Exempt Property Subject to Tax After Purchase

In action against city to have a tax assessment on property declared a cloud on title, held property purchased from tax-exempt organization was subject to taxation upon date of purchase under statute making such property immediately subject to taxation on pro rata basis for unexpired part of taxable year. *Bronx Garment Center, Inc. v. City of New York*, 106 N. Y. W. (2d) 720 (N. Y. S. Ct., Bronx County, April 11, 1951).

Vagrancy—Notwithstanding Fixed Abode and Means of Support

In appeal of conviction of vagrancy, held that under statute person who wanders about streets at late and unusual hours at night without visible and lawful business and not giving a good account of herself, defendant could be guilty of vagrancy even though she had a fixed abode and lawful means of support. *Beall v. District of Columbia*, 82 Atl. (2d) 765 (Mun. Ct. of App. for D. C., Aug. 6, 1951).

Recent City Manager Appointments

The following portraits are of city managers whose appointments have been announced in preceding issues of *The American City*

E. R. Cross
Mexico, Mo.

William J. Mount
Corona, Calif.

F. Frederick Bien
Puyallup, Wash.

W. A. Gilchrist
Roseburg, Ore.

Robert Lovelace
Delray Beach, Fla.

ROY E. ADAIR will move from the managership of Tonkawa, Okla., to take the place of JAMES W. FLINT as manager of Guthrie, Okla. Mr. Flint has accepted the appointment as first manager of Englewood, Colo.

The first manager of Sierra Madre, Calif., is R. MERRITT BAKER, formerly manager of Auburn, Calif.

JOSEPH BASE is the new manager of Ellensburg, Wash., succeeding James E. Morrison. Mr. Base was principal administrative analyst for the City of Los Angeles before moving to Ellensburg.

IRVING H. BECK, assistant manager of Schenectady, N. Y., has accepted the appointment as first manager of Norwich, Conn.

LEONARD L. BISHOP, JR., former manager for the towns of Levant and Carmel, Maine, has succeeded E. C. MARRINER, JR., as manager of Wells, Maine.

P. A. E. VILLENEUVE will be succeeded by ROLAND BOURGAULT, town engineer, as manager of Malartic, Quebec.

Greeley, Colo., has appointed as its first manager RAY CASE, formerly general manager of the board of public works of Beatrice, Nebr.

Schenectady, N. Y., has appointed its public health engineer, MORRIS M. COHN, to replace CHRISTIAN N. KOURAY as manager of the city.

FRANK K. DAWSON, former assistant manager of Sturgis, Mich., has succeeded ROBERT F. MOTT as manager of Galena, Ill.

THOMAS A. DENNIS, building contractor, has been appointed manager of Sherman, Texas, succeeding CHARLES R. PORTER.

The new manager of Anne Arundel County, Md., succeeding WILLIAM S. COBURN, is EDWARD R. LONERGAN.

J. H. VALIQUETTE has retired as manager of Trois Rivieres, Quebec, and has been succeeded by ROGER LORD, former manager of Cap de la Madeleine, Quebec. LEO LUPIEN, former manager of Louiseville, Quebec, has succeeded Mr. Lord as manager of Cap de la Madeleine.

The new manager of Wakefield, Mich., is GEORGE MEHOLICK, JR., former assistant manager of Glenview, Ill. DONALD L. BROWN was the previous manager of Wakefield.

Winnetka, Ill., has appointed C. R. MILLER as village manager. Mr. Miller was previously director of utilities under H. L. WOOLHISER.

LAWRENCE NEAL, auditor, has been appointed to take LEONARD L. BISHOP's place as manager of Carmel and Levant, Maine.

Sulphur Springs, Texas, has appointed L. A. PATTON to the city manager position vacated by J. P. TACKETT. Mr. Patton was manager of Childress, Texas.

KYLE ROOP, planning engineer of Falls Church, Va., has moved to Lexington, Va., to succeed J. McK. DUNLAP as city manager.

RALPH E. SPEER, former city engineer of of Iron Mountain, Mich., is the new manager of Sault Ste. Marie, Mich. He succeeds GILBERT PETERMAN.

Douglas, Ga., has appointed its city clerk, GLENN TANNER, to succeed JAMES W. MOORE as city manager.

E. D. WALSH, formerly practicing privately as a public accountant, has been appointed manager of St. John, N. B.

CLARENCE E. RIDLEY, *Director*
International City Managers' Association

First Annual LaGuardia Awards Presented

LEPERRY COOKINGHAM, City Manager of Kansas City, Mo., and The Greater Philadelphia Movement (represented by its three co-chairmen, C. Jared Ingersoll, William Fulton Kurtz, and Robert T. McCracken) were recipients of the first annual presentation of the LaGuardia Award on December 15 in New York City. The citations are given for outstanding achievement in the field of municipal affairs.

The decision of the Board of Directors of the LaGuardia Memorial Association to approve the awards to an individual and a citizen's movement followed a careful screening of scores of eligible individuals and groups throughout the United States. A special advisory panel studied nominations and made its recommendations to the LaGuardia Memorial Association, an organization formed on December 11, 1947, 65th anniversary of the birth of Fiorello H. LaGuardia, the dynamic mayor of New York City who had passed away three months before.

The panel consisted of Charles A. Edison, former Governor of New Jersey; Daniel W. Hoan, former Mayor of Milwaukee; Herbert Emmerich, Director of the Public Administration Clearing House; and Mrs. Anna Lord Strauss, a United States delegate to the United Nations. Participating in the initial nominations were the National Municipal League, the Governmental Research Association, and the American Municipal Association. Nominations were then referred to the Graduate Division of Public Service of New York University which screened the recommendations.

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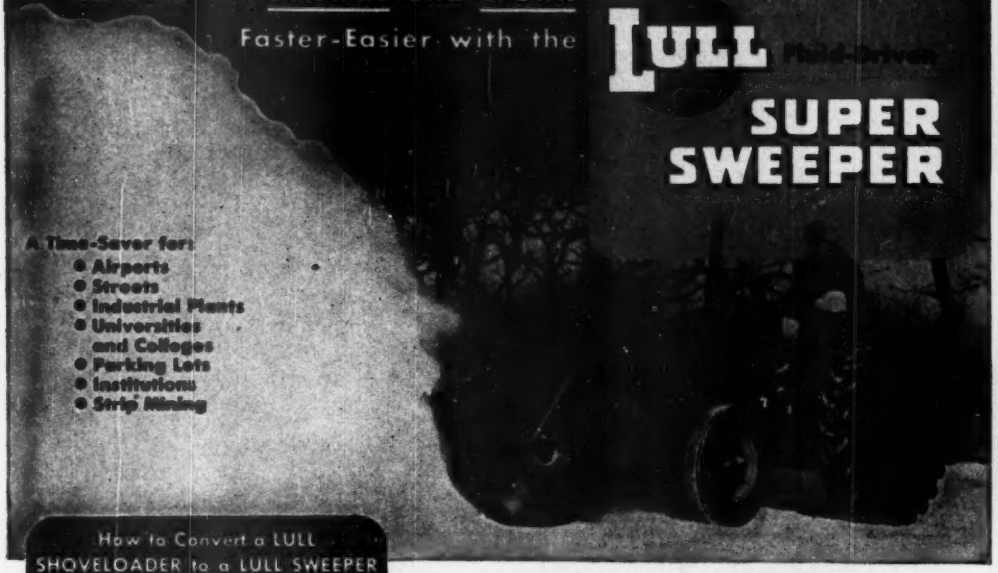

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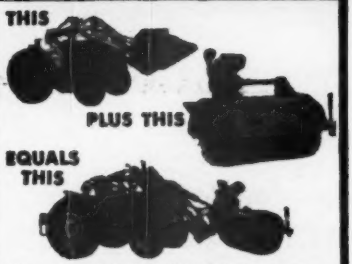

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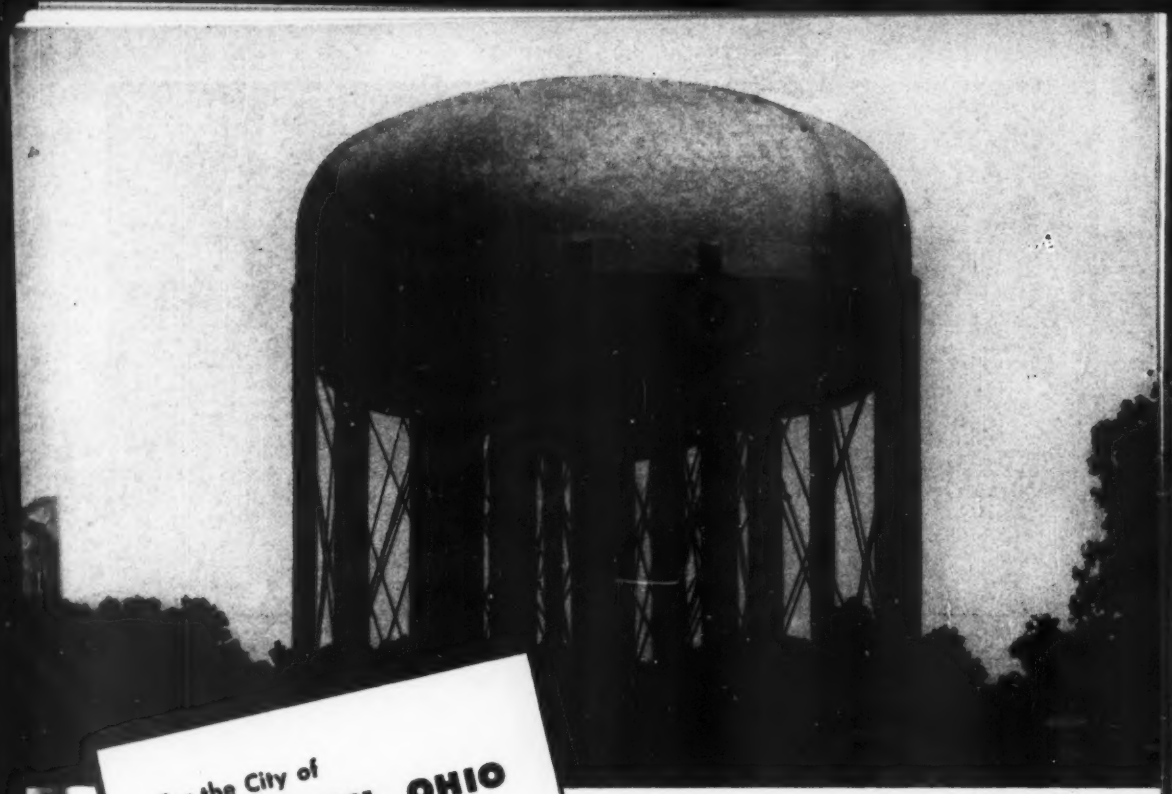

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Conventions — When and Where

Conventions listed this month for the first time are indicated by an asterisk (*)

Jan. 15—New York, N. Y.
American Water Works Association—New York Section. Winter Luncheon Meeting (Hotel Park Sheraton). Sec.-Treas., R. K. Blanchard, 50 W. 50th St., New York 20, N. Y.

Jan. 15-18—Washington, D. C.
Highway Research Board. Annual Meeting (Natl. Academy of Science Bldg.). Acting Dir., Fred Burggraf, 2101 Constitutional Ave. NW., Washington 25, D. C.

Jan. 17-18—New York, N. Y.
New York Sewage and Industrial Wastes Association. Annual Meeting (Statler Hotel). Exec. Sec., R. C. Sweeney, New York State Health Dept., 21 Broadway, White Plains, N. Y.

Jan. 21-24—Houston, Texas
American Road Builders' Association. Annual Meeting (Rice Hotel). Exec. Vice-Pres., Lt. Gen. Eugene Reybold, International Bldg., Washington 4, D. C.

Jan. 27-31—Chicago, Ill.
Associated Equipment Distributors. Annual Convention (Stevens Hotel). Exec. Sec., P. D. Hermann, 360 North Michigan, Chicago, Ill.

Jan. 28-30—Cincinnati, Ohio
Association of Asphalt Paving Technologists. Annual Meeting (Netherlands Plaza Hotel). Sec.-Treas., W. K. Parr, Box 376, Ann Arbor, Mich.

***Jan. 28-30—Philadelphia, Pa.**
American Society of Landscape Architects. Annual Meeting (Hotel Warwick). Corr. Sec., Bradford Williams, 9 Park St., Boston 8, Mass.

Feb. 6-8—Buffalo, N. Y.
Association of Towns of the State of New York. Annual Meeting (Hotel Statler). Exec. Sec., Edward F. N. Uhbe, 91 State St., Albany, N. Y.

Feb. 6-8—Los Angeles, Calif.
California Conference on Street and Highway Problems. Annual Conference (University of California). Institute of Transportation and Traffic Engineering, University of California, Los Angeles, Calif.

***Feb. 7-8—Akron, Ohio**
Air Pollution and Smoke Prevention Association of America — East Central Section. Annual Meeting (Mayflower Hotel). Sec., Harry C. Ballman, 4400 Fifth Ave., Pittsburgh 13, Pa.

Feb. 25-28—Detroit, Mich.
Associated General Contractors of America, Inc. Annual Meeting (Statler Hotel). Managing Director, H. E. Foreman, 1227 Munsey Bldg., Washington, D. C.

Feb. 27-March 1—Milwaukee, Wis.
Community Chests and Councils of America, Inc. Bi-Annual Meeting (Hotel Schroeder). Exec. Dir., Ralph H. Blanchard, 155 E. 44th St., New York 17, N. Y.

Feb. 28-March 1—Chicago, Ill.
American Concrete Pipe Association. Annual Convention (Drake Hotel). Managing Dir., Howard F. Peckworth, 228 N. LaSalle St., Chicago 1, Ill.

March 5-7—Atlantic City, N. J.
Association of Highway Officials of the North Atlantic States. Annual Convention (Traymore Hotel). Sec.-Treas., A. Lee Grover, 1035 Parkway Ave., Trenton, N. J.

March 9-13—College Station, Texas
Texas Water and Sewage Works Association. Annual Meeting (Texas A & M College) Sec., V. M. Ehlers, 501 W. 33rd St., Austin, Texas.

***March 12-14—Atlantic City, N. J.**
New Jersey Mosquito Extermination Association. Annual Meeting (Hotel Haddon Hall). Exec. Sec., Bailey B. Pepper, Experiment Station, New Brunswick, N. J.

***March 12-14—Atlantic City, N. J.**
New Jersey Sewage and Industrial Wastes Association. Annual Meeting (Hotel Traymore). Sec.-Treas., Michael S. Kachorsky, P. O. Box 766, Manville, N. J.

***April 7-9—Fayetteville, Ark.**
Arkansas Water and Sewage Works Conference. Annual Meeting (Engineering Hall, University of Arkansas). Exec. Sec., Harrison Hale, Southern State College, Magnolia, Ark. Locally contact Professor L. R. Heiple, Engineering Hall, Fayetteville, Ark.

***April 10— Billings, Mont.**
Montana Sewage and Industrial Wastes Association. Annual Meeting (Northern Hotel). Sec.-Treas., H. B. Foote, State Board of Health, Helena, Mont.

***April 10-12—Clemson S. C.**
South Carolina Water and Sewage Works Association. Annual Meeting (Clemson College). Exec. Sec., W. J. Linton, Wade Hampton Bldg., Columbia, S. C.

April 10-12—Mesa, Ariz.
Arizona Sewage and Water Works Association. Annual Meeting (Maricopa Inn). Exec. Sec., Harry S. Jordan, State Health Dept., State Office Bldg., Phoenix, Ariz.

April 14-17—Lafayette, Ind.
Purdue Road School. Annual Meeting (Union Bldg., Purdue University). Exec. Sec., Ben H. Petty, C. E. Bldg., Purdue University, Lafayette.

April 16-18—Syracuse, N. Y.
American Water Works Association—New York Section. Spring Meeting (Hotel Syracuse). Treas., R. K. Blanchard, 50 West 50th St., New York 20, N. Y.

***April 17-18—Washington, D. C.**
Maryland-Delaware Water and Sewerage Association. Annual Meeting (Wardman Park Hotel). Sec.-Treas., W. McLean Bingley, 2411 N. Charles St., Baltimore 18, Md.

***April 29-May 1—Seattle, Wash.**
American Public Power Association. Annual Meeting (Olympic Hotel). Gen. Mgr., Alex Radin, 1757 K St., Washington 6, D. C.

***May 3—Kansas City, Kans.**
American Water Works Association—Kansas Section. Annual Business Meeting (Town House). Sec.-Treas., Harry W. Bradley, 640 Highland, Salina, Kans.

May 4-9—Kansas City, Mo.
American Water Works Association. Annual Conference. Sec., Harry E Jordan, 521 Fifth Ave., New York 17, N. Y.

May 5-6—Washington, D. C.
National Housing Conference. Annual Meeting (Hotel Statler). Exec. Vice-Pres., Lee F. Johnson, 1025 Vermont Ave., NW., Washington, D. C.

***May 7-9—West Lafayette, Ind.**
Industrial Waste Utilization Conference. Annual Meeting (Purdue Memorial Union). Exec. Sec., Don E. Bloodgood, Department of Engineering, Purdue University, Lafayette, Ind.

May 15-17—Lewiston, Idaho
Idaho Municipal League. Annual Meeting (Lewis and Clark Hotel). Exec. Sec., R. W. Smith, Box 787, Weiser, Idaho.

***May 15-17—New York, N. Y.**
The United States Conference of Mayors. Twentieth Anniversary Conference (The Waldorf-Astoria). Exec. Dir., Paul V. Betters, 730 Jackson Pl. NW., Washington 6, D. C.

***May 21-23—Dallas, Texas**
National Institute of Municipal Clerks. Annual Meeting (Hotel Baker). Pres., Arthur J. Shinners, Town Hall, Brookline, Mass.

June 8-10—Bedford, Pa.
Pennsylvania State Association of Township Commissioners. Annual Meeting (Bedford Springs Hotel). Sec.-Treas., H. A. Fritschman, 2325 Darby Rd., Havertown, Pa.

***June 8-11—Asheville, N. C.**
National Association of Tax Administrators. Annual Meeting (Grove Park Inn). Exec. Sec., Charles F. Conlon, 1313 E. 60th St., Chicago 37, Ill.

***June 9-13—New York, N. Y.**
National Fire Protection Association. Annual Meeting (Hotel Statler). Gen. Mgr., Percy Bugbee, 60 Batterymarch St., Boston, Mass.

Proposed Giant Conduit Will Help Fill Southern California Water Needs

CALIFORNIA plans a 567-mile, financially self-supporting conduit to bring water from the northern part of the state to water-short southern California. According to the state's Division of Water Resources, Governor Warren will ask the 1952 Legislature for money to conduct surveys and prepare plans for the project. It is proposed to finance the project by revenue bonds without federal assistance.

California is unusual in that two-thirds of its population is in the southern area, but two-thirds of its water is in the north. This new project will help to equalize this unbalanced condition. It will be known as the Feather River Project and Sacramento-San Joaquin Diversion Projects. It will start with a proposed Oroville Reservoir on the Feather River that will impound water, allowing it to flow down the Feather and Sacramento Rivers to supplement surplus water from other streams in the Sacramento-San Joaquin Delta. The water thus made available will be lifted from the Delta by pumps into a conduit running southward along the west side of San Joaquin Valley to the valley's southern end. From this point, pumping stations will lift the water to an elevation of 3,375 feet; from there, 10½ miles of tunnels will convey it through the Tehachapi Mountains into southern California, almost to Mexico.

California's State Division of Water Resources feels that this is only a step toward the solution of the southern California water problems. Later, additional storage reservoirs and conduits will be required to provide double the amount of water to be made available by the initial project to the southern area. The water supplied by the proposed project will supplement local water supplies and water obtained under California's rights to water of the Colorado River.

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Municipal and Civic Publications

Basic Public Health Problems

ENVIRONMENT AND HEALTH—*Public Health Service Publication No. 84, Federal Security Agency.* 1951. 152 *pp. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.* 75c.

An excellent comprehensive, well-illustrated publication, designed for use by both administrator and layman, which describes the relation of fundamental environmental forces to the health and comfort of present and future generations. The booklet describes Public Health Service programs which aid states and communities in their efforts to solve problems of environmental health.

Chapters are devoted to drinking water; water-pollution control; air-pollution control; milk and food; pest control; health and safety at home; refuse control; school and rural environments; protection for travelers; industrial health and radiological health.

Zoning Board of Adjustment Manual

A GUIDE FOR BOARDS OF ZONING ADJUSTMENT—*Southern Association of State Planning and Development Agencies,* 1313 *E. 60th St., Chicago* 37, *Ill.* 1951. 27 *pp.* $1.

This manual, a companion to *A Guide to Zoning* (published in 1950), is the work of the Association's Committee on Uniform Manuals. The committee has drawn on the technical staffs and experience of agencies throughout the South—boards of zoning adjustment, local planning commissions, member agencies, and federal agencies such as FHA and TVA. The Guide sets forth general principles which may help to guide board action in performing its duties under the zoning ordinance. The three main sections are headed: Why a Board of Zoning Adjustment, Powers and Duties of the Board, and Steps for Board Action. The Appendix contains sample forms and by-laws.

How Airports Affect Property

ANALYSIS OF RESIDENTIAL PROPERTIES NEAR AIRPORTS—*Federal Housing Administration, Wash., D. C., July,* 1951. 23 *pp.*

This report has been prepared to aid FHA Field Officers in making a determination of: the effect of airports on marketability of residential properties in immediate and outlying neighborhoods; airport data essential in considering the eligibility of residential properties in close proximity to airports; community planning practices that can be used to lessen the effect of airports upon residential properties and appropriate land usage of properties adjacent to airports; the effect of airport zoning on mortgage risk, and the effect of air communications on future land patterns and potential residential sites.

The United States Has Enough Water

WATER FOR INDUSTRY—*Technical Bulletin No. 17 of The Urban Land Institute* 1737 *K Street, NW., Washington 6, D. C. November,* 1951. 31 *pp.* $5.

This bulletin has been prepared to show that the country's water supply, if properly developed, will be adequate and need not throttle future expansion of the nation's industry. It describes briefly the basic hydrological data that needs to be better understood for good planning of future water-supply developments. Industry's stake in sound water development is studied in Part II which shows the large quantities and high quality needed for many industrial processes. "Water for Industry" should be especially interesting to city planners, industrial developers, and urban real estate operators.

Revised and New ASTM Standards

ASTM Standard on Bituminous Materials for Highway Construction, Waterproofing and Roofing. American Society of Testing Materials, 1916 *Race St., Philadelphia 3, Pa.* 344 *pp.* $3.25.

The November 1951 edition of this compilation brings up to date the 98 ASTM standard and tentative specifications, test methods, recommended practices, and definitions of terms pertaining to bituminous materials for highway construction, waterproofing and roofing. The publication is sponsored jointly by ASTM Committee D-4 on Road and Paving Materials and Committee D-8 on Bituminous Waterproofing and Roofing Materials.

Additions since the 1948 edition cover methods of testing asphalt-base and bituminous emulsions for use as protective coatings, bitumen content of paving mixtures by centrifuge, cohesion and compressive strength and specific gravity of bituminous mixtures, and plastic flow of fine-aggregate bituminous mixtures.

Highway Research Papers

HIGHWAYS RESEARCH BOARD PROCEEDINGS. *National Research Council, Washington 25, D. C.* 531 *pp.* $7.50.

This is a bound volume containing the papers delivered at the 13th annual meeting of the Highway Research Board. The material is classified in groups under such headings as economics; materials and construction; maintenance; traffic, and soils.

British Municipal Yearbook

THE MUNICIPAL YEAR BOOK AND PUBLIC UTILITIES DIRECTORY, 1951-52—*Published by The Municipal Journal, Ltd., 3 and 4 Clement's Inn, Strand, W.C. 2, London.* 1758 *pp.* £3 15s.

This annual reference book comprises four main parts:

(1) Introductory: List of contents, prefaces, and general review of the administration

(2) Technical Sections: Data, statistics, and reference material concerning individual local government and public utilities services.

(3) Main Directory: Details of government departments and all local authorities in Great Britain, Northern Ireland, the Isle of Man, Channel Islands, and Republic of Ireland.

(4) Lists and Indices: Names of Chief Officers, Associations, Authorities, Subjects and Advertisers.

Building Codes Discussed

BUILDING CODES AND CONSTRUCTION PROGRESS—*Chamber of Commerce of the United States, Washington 6, D. C.* 1951. 28 *pp.* 50c *ea.* 2 *to 9 copies* 40c. 10 *or more* 30c.

The importance of building codes; criticisms, progress, and improved procedures in codes; where to obtain model codes; plumbing and electrical codes; state codes and type of state legislation needed, and a proposed model building regulation act are among the topics covered in this pamphlet. The purpose of the Chamber of Commerce of the United States in publishing this study is to forward modernization and sound administration of building codes by the individual community.

Conservation of Chicago Communities

CAN OUR NEIGHBORHOODS BE SAVED?—*Speech by Alderman Robert E. Merriam. Distributed by Housing and Redevelopment Coordinator, 69 W. Washington St., Room* 1610, *Chicago 2, Ill.* 1951. 21 *pp.*

This "Package Plan" to stop the decay of Chicago's middle-aged communities was delivered before The City Club of Chicago on October 29. It calls for a strengthened building department, more neighborhood planning, new conservation districts, a new spirit for Chicago, and a million dollars to start the job.

Urban Communities Text

AMERICAN URBAN COMMUNITIES—*By Wilbur C. Hallenbeck. Harper & Brothers, New York 16, N. Y.* 1951. 617 *pp.* $6.

This basic and comprehensive textbook considerably expands the boundaries of the field of study of American urban communities. Fortunately, the book's orientation is such that it focuses attention on the practical needs for improvement and enlargement of city and regional planning techniques and powers.

The book is aimed not only at college and graduate students, but also at citizens seeking to make their communities better places in which to live, to work, and to find the fuller satisfaction of living. It should be of aid in helping to define the responsibilities which they face, in addition to broadening their understanding of urban patterns generally.

An immense amount of material has been carefully gone over, culled, and skillfully treated by the author to make the book a meaningful volume.

The book contains seven major sections: Part I, The Rise of American Cities; Part II, External Relationships of Cities, including interesting chapters on Cities in Relation to the Flow of Energy and Materials and Responsibilities of Cities for Regional Development; Part III, The Form and Structure of Cities, including discussion of *Suburbanization and Decentralization;* Part IV, Organized Life in Cities; Part V, Patterns of Urban Structure; Part VI, People in Cities, and Part VII, Cities and the Future.

Up-to-Date Municipal Accounting

MUNICIPAL ACCOUNTING AND AUDITING—*National Committee on Governmental Accounting. Municipal Finance Officers Association,* 1313 *East 60th St., Chicago* 37, *Ill. September* 1951. 260 *pp.* $4.

The principles and procedures of accounting, budgeting, auditing, and reporting for municipalities are here discussed. The various forms included (51 forms for financial statements, 15 forms for statistical tables, 5 forms for financial statements prepared during the fiscal period) will serve as guides to municipal finance officers in making their detailed annual reports, or shorter periodic reports.

Part I discusses the general principles of municipal accounting.

Part II is divided into four sections: (1) a description of the individual funds, containing financial statements for each fund or group of related funds; (2) financial statements applicable to all funds; (3) statistical tables; (4) financial statements prepared during the fiscal period.

Part III deals with municipal audit procedure.

Part IV defines the most commonly used municipal accounting terms.

This book revises material that appeared in four previous publications of the National Committee on Governmental Accounting: Municipal Accounting Statements, Municipal Funds and Their Balance Sheets, Municipal Accounting Terminology, and Municipal Audit Procedure.

New Housing Quarterly

HOUSING RESEARCH—*No. 1, Fall* 1951. *Published by the Housing and Home Finance Agency. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.* 51 *pp.* 30c.

Housing Research, the new HHFA quarterly, which begins with this Fall 1951 issue, will bring to its readers information gathered as a result of many research projects now being conducted by the Agency. This number contains articles on "Techniques for Conservation in Home Construction;" "Small City Mortgage Market: Hagerstown;" "Metropolitan Mortgage Market: San Francisco;" "Building Self-Help Homes," and "Surveying Materials Used in Home Construction."

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Community Organization Field and Process

COMMUNITY ORGANIZATION AND AGENCY RESPONSIBILITY—*By Ray Johns and David F. DeMarche. Associated Press,* 291 *Broadway, New York 7, N. Y.* 1951. 274 *pp.* $3.75.

A comprehensive picture of the field, process, problems, and future of community organization for social welfare. Although the book deals largely with local community organizations, there is some study and appraisal of recent efforts toward extension of such organization to state and national levels.

On the basis of a study of actual agency experience of over 500 workers in 30 different agencies, the authors analyze the problem of relationships, including the effect of local-national patterns on the social welfare agencies of a specific community. Barriers to cooperative efforts are explored. The attitudes, skills and training needed to maintain interagency relationships and to set up guiding principles are set forth, and frontiers for community organizations in research, planning and co-ordination, service, finances, personnel and interpretation are outlined.

Agency executives, teachers, and students should find this book of value.

Dangerous Materials Handbook

HANDBOOK OF DANGEROUS MATERIALS — *By N. Irving Sax. Reinhold Publishing Corp.,* 330 *W* 42*nd St., New York, N. Y.* 1951. 848 *pp.* $15.

This is a remarkably complete reference book covering over 5,000 hazardous industrial materials, including tradename products. It offers information particularly valuable to those concerned with safely handling, storing, or shipping chemicals and other dangerous items. These materials are alphabetically arranged, cross-referenced and indexed. For the first time, this book makes readily available simple, concise and authoritative statements concerning the hazardous properties of so many materials.

Information about each material includes: maximum allowable concentration, toxicity, flammability, storage and handling, physical properties, formulas and shipping regulations. Wherever possible, detailed information is given on symptoms, treatment and antidotes, first aid suggestions, personnel safety precautions, fire extinguishing agents and other pertinent data. The book also covers the important fields of explosives, fungus infections, and radiation safety.

Industrial Locations in San Francisco Bay Area

A GUIDE TO INDUSTRIAL LOCATIONS IN THE SAN FRANCISCO BAY AREA—*Published by the San Francisco Bay Area Council,* 130 *Montgomery St., San Francisco 4, Calif.* 1951. 54 *pp. plus map.*

The present edition is a revision of the 1949 inventory and analysis of physical and economic factors relating to the location of new industries and branch plants within the Bay Area. Details of rail, highway and commuting facilities, labor supply, wage rates, availability of utility services, water supply and costs, deep water facilities, tax and insurance rates, topography, sub-soil quality and population are included in this reference guide, which contains also tables and descriptive charts. A useful supplement is a three-color map showing zoned and unzoned industrial acreage surrounding San Francisco Bay, transportation routes, and principal cities.

Zoning for Industry

PRINCIPLES OF INDUSTRIAL ZONING—*Published by National Industrial Zoning Committee,* 820 *Huntington Bank Bldg., Columbus* 15, *Ohio. (Albert E. Redman, Secretary).* 14 *pp.* 1951.

Twelve principles of industrial zoning, based on the premise that industry is beneficial and necessary for most communities and should not be excluded indiscriminately by zoning regulations. The booklet, which is illustrated, should aid in promoting wider public understanding and interest in this major phase of zoning protection—the community's basis for making a living.

Texts on Methods and Procedure in Police Management

POLICE ORGANIZATION AND MANAGEMENT — *By V. A. Leonard. Published by The Foundation Press, Inc.,* 260 *Flatbush Ave. Ext., Brooklyn* 1, *N. Y.* 1951. 525 *pp.* $5.

In demonstrating how proper organization, planning, and supervision will aid the police executive in making the most effective use of personnel and equipment available, the author accents the following points:

The use of adequate records and reporting in the intelligent control of operations.

The development and distribution of an efficient patrol force.

Sound beat construction and adequate patrol distribution.

The use of statistical analyses of records data in predicting needs.

The proper use of specialized forces, detectives, crime prevention, traffic control, vice squad, etc., as supporting elements of the patrol force.

The efficient application of modern technological methods and equipment.

Planning for General Operations—the normal day-to-day work of the department.

Readiness for Special Operations—planning and execution of plans to meet critical situations.

Workers in penology, probation and parole, judicial and welfare administration, sociology, psychology, etc., as well as police officials, will find this book valuable. The author is one of the nation's leading authorities on police work, his career having included 14 years of actual police duty, most of this time under August Vollmer in the Police Department at Berkeley, Calif. He organized and currently heads the Department of Police Science and Administration, State College of Washington, one of the most successful professional schools for police training.

On Organizing the Community

TRADING HOME TOWNS—A COMPANION PIECE TO POINT FOUR?—*Published by the New York Herald Tribune, Inc. Additional copies may be obtained from Information Service Department, New York Herald Tribune.* 1951. 31 *pp.* 10c. *each.*

In addition to "Pilot Project for a Community Exchange Program" (based on the Herald Tribune Forum Panel on October 24, 1951), this booklet contains "The World of Carroll County," an editorial from the October 28 issue of the Herald Tribune; "Home Towns: Building World Strength in Communities," a discussion guide prepared by the American Council for the Community; and a Bibliography on The Community and Community Organizations.

Model Airport Construction Plans

MODEL SET OF AIRPORT PLANS — *Department of Commerce, Civil Aeronautics Administration, Office of Airports. June* 1950. 19 *pp.*

These plans, it is stated, should be used only as a guide to obtain uniformity in airport construction—they are not a "Book of Standards." Drawn for a hypothetical town, they include summaries of quantities of major items, location, master plan, layout, clearing maps, as well as grading and drainage plans; runway, taxiway, access road, drainage line profiles; paving, construction, lighting, turfing, etc., diagrams and plans.

Discrimination in Housing in Cicero, Ill.

THE TIME BOMB THAT EXPLODED IN CICERO—*By Charles Abrams. Reprinted from* Commentary, *November* 1951. *For free copies write to New York State Committee on Discrimination in Housing,* 35 *West* 32*nd St., New York* 1, *N. Y.* 8 *pp.*

A narrative of the background and causes of the violence in Cicero and other sections of the Chicago area that contains recommendations for the mitigation of this pressing problem.

What Is Your City Called?

NICKNAMES OF AMERICAN CITIES—*By Gerard L. Alexander. Special Libraries Association,* 31 *East* 10 *St., New York* 3, *N. Y.* 1951. 35 *pp.* $2.

A listing of some fifteen hundred city, town and village nicknames—past and present—which has been compiled from newspapers, periodicals, radio, and literature. The material is cross-indexed under "A Listing By States and Cities" and "A Listing by Nicknames."

Planning and Housing Reports

CHICAGO, ILL.—Redevelopment and Relocation Activities in Chicago. Housing and Redevelopment Coordinator, 69 W. Washington St., Chicago 2, Ill. October 1951. Mimeo. 4 pp.

CINCINNATI, OHIO — Redevelopment of Blighted Areas. Published by the Cincinnati City Planning Commission. Sept. 1951. Illus. Tables. 63 pp. $1.

LOS ALTOS, CALIF.—Los Altos: A Study of the Central Area. Santa Clara County Planning Commission. Sept. 1951. Maps. 10 pp.

NEW HAVEN, CONN.—New Haven's Program for Public Improvements, 1951-1957. Report by the Capital Budget Programming Committee. September 1951. Graphs. Unpaged.

NEW YORK, N. Y.—Fresh Kills Land-Fill. Report to Mayor Impellitteri and the Board of Estimate. Nov. 1951. Illus. 12 pp.

OSHKOSH, WIS. — A Public Opinion Survey, 1950-1951. By John W. Alexander. Department of Geography, University of Wisconsin. Printed and distributed by the City Planning Commission, Oshkosh, Wis. Mimeo. 28 pp.

PHILADELPHIA, PA.—Philadelphia Housing Quality Survey. Philadelphia City Planning Commission. 1951. Maps. Tables. 148 pp.

TENNESSEE — Sources of Municipal Revenue. Tennessee State Planning Commission, 517 Commerce St., Nashville 3, Tenn. Nov. 1951. Mimeo. 37 pp.

UNITED STATES—Annexation of Fringe Areas: A Selected Bibliography. American Society of Planning Officials, 1313 E. 60th St., Chicago 37, Ill. Sept. 1951. Mimeo. 6 pp.

——Motion Picture Films on Planning and Housing: A Bibliography. American Society of Planning Officials, 1313 E. 60th St., Chicago 37, Ill. Aug. 1951. Mimeo. 7 pp.

——The TVA Program: A Bibliography of Selected Readings. Director of Information, Tennessee Valley Authority, Knoxville, Tenn. Revised Sept. 1951. Mimeo 24 pp.

——National Conference on Public Housing Finance, June 13, 1951. Donald S. MacFadden, Chrmn. of Committee on Publications. The Municipal Forum of New York, care of Eastman, Dillon & Co., 15 Broad St., New York 5, N. Y. 75 pp.

Other Reports Received

AUGUSTA, GA. — Yearbook of the City Council. 1950. 47 pp.

COLORADO — Directory of Colorado City and Town Officials. Colorado Municipal League, 327 Norlin Library, Boulder, Colo. 1951. 16 pp. $2.50.

GREEN BAY, WIS. — Cities Grow Too — Do We Want To Stunt Green Bay's Growth? 1951. Illus. 15 pp.

HEARNE, TEXAS—Accomplishments of the City of Hearne, Texas, 1950-1951. Report of the City Manager. Illus. Unpaged.

HARRIS COUNTY, TEXAS — Summary of Narrative Description of Harris County by Department. The Tax Research Association of Houston and Harris County, Inc. Nov. 15, 1951. Mimeo. 43 pp.

KANSAS CITY, MO.—Newspaper Coverage—Kansas City Flood, 1951. Prepared by the Research and Budget Department, Kansas City, Mo. Aug. 1951. 186 pp.

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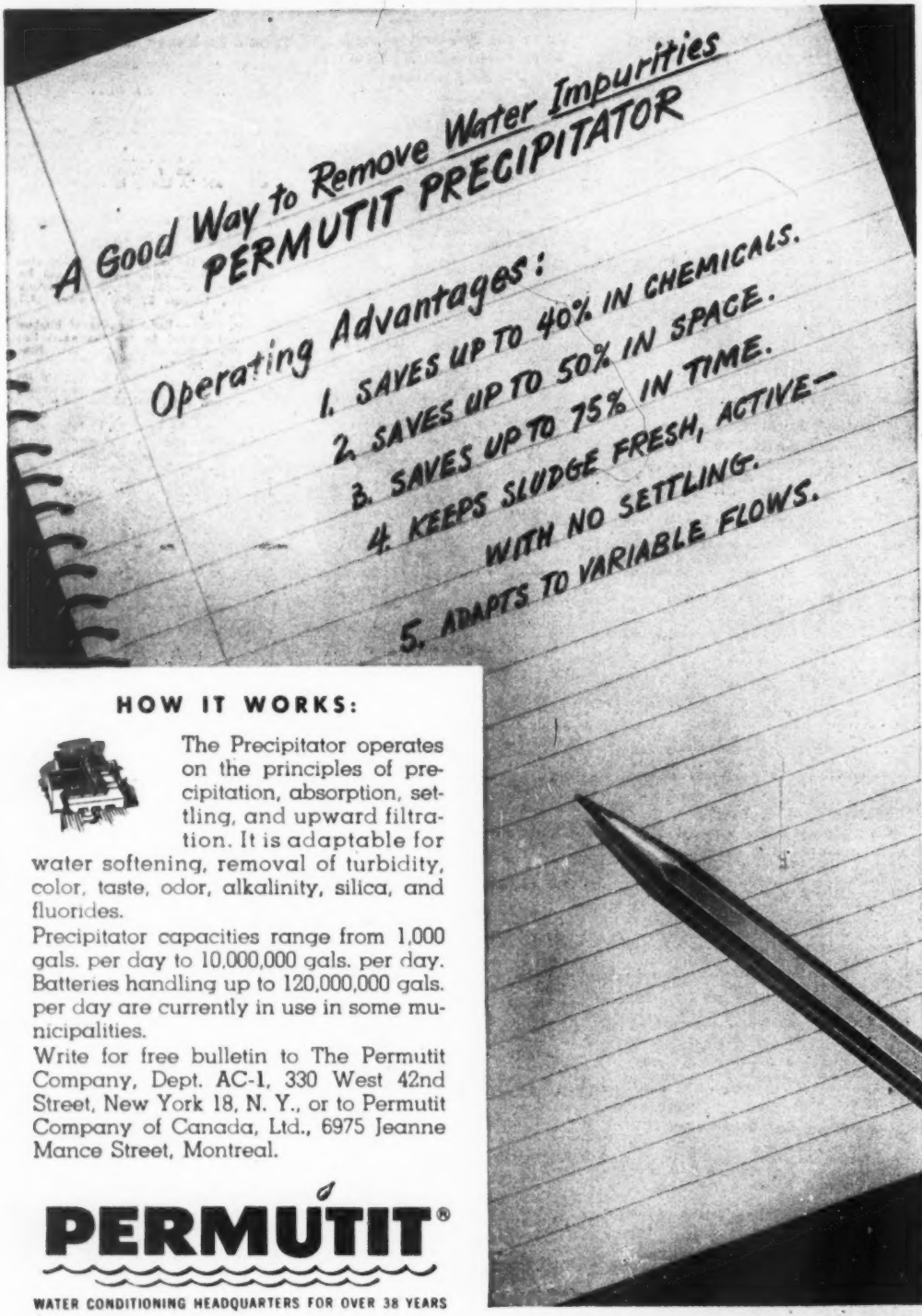
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Part-Time Policewomen In New Orleans

A MOTION by New Orleans' Mayor, deLesseps S. Morrison, authorizing the employment of 32 policewomen for part-time traffic duty, was adopted unanimously by the Commission Council. They will be paid salaries of $60 per month for 15 hours of work per week: Mondays through Fridays, from 8 a.m. to 9:30 a.m. and from 4:30 p.m. to 6 p.m.

The plan is to station the women at peak traffic hours at intervals along the city's downtown business streets to prevent motorists from parking in moving traffic lanes. They will wear caps and coats or blouses of a uniform design.

Below-Ground Radio Fire Alarm

LAST spring the City of San Jose, Calif., received from the Federal Communications Commission a license for developmental operation in the fire service. We are experimenting, using equipment supplied by the Jennings Radio Mfg. Co. of San Jose, with the feasibility of transmitting low-frequency signals below-ground. This portion of the test program cannot be completed until after several months of experimentation during the rainy season. The value of below-ground transmission is largely the limitation on the radius of transmission of signals to a few miles, thus increasing the prospect that the FCC will permit cities to use radio equipment for fire-alarm purposes without complicating the already overcrowded radio spectrum.

The second phase of the test program involves the design and construction of practical equipment which will be the prototype of equipment mass-produced for installation. Undoubtedly the approval by the National Board of Fire Underwriters of this equipment, for elimination of deficiency points in a city's grading, will be sought before any substantial installations are made.

A. P. HAMANN
City Manager
San Jose, Calif.

This reproduction of the frontispiece from "—Life and Spirit Grow," the 1951 Annual Report of the Commissioner of Housing to the Governor and Legislature of the State of New York, illustrates how private, public, and limited-dividend housing and educational, recreational, and cultural facilities might be combined in a neighborhood unit.

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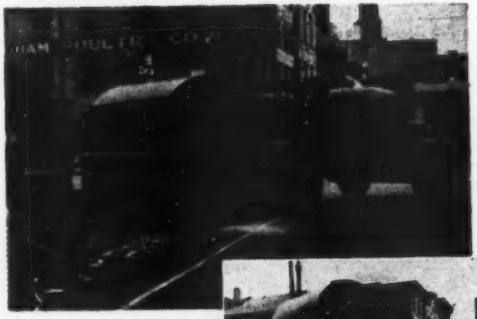

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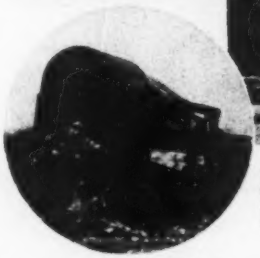

THREE STAGES of quick pick-up, hauling and dumping are shown while Dempster-Dumpster is at work in Baltimore.

DEMPSTER BROTHERS, 812 Dempster Bldg., Knoxville 17, Tenn.

Flame-Spalled Diffuser Plates

(*Continued from page 84*)

new diffuser pressure—6.8 to 7.5 pounds during this period—the power saving was many times this amount.

Briefly, the theory and requirements of the new method are as follows:

Because the plates are porous and are made of a material that does not conduct heat readily, it is possible, by the proper application of heat, to raise the temperature of a narrow thin band of the upper clogged layer quickly while the remainder stays comparatively cool. The spalling of the surface is accomplished because of the sudden expansion of the heated particles.

The success of this method of thermally spalling the clogged surface is based on full control of all operations, including uniform application of a controlled intensity of heat to a fixed minimum area, and controlled uniform passage over the area of the diffusers. This procedure removes a surface thickness which has been predetermined as a safe rate of spalling. Since the diffusers vary to some extent in the depth of clogging, the treatment is repeated until the required amount is removed from the diffuser. When it is necessary to make repeated passes across the diffuser, the diffusers are allowed to cool between passes by going over a number of diffusers in the same row before returning to start a new pass.

The proper speed of spalling results in little effect on diffuser holders; thus it is not necessary to remove the diffusers for this treatment.

Results

With this new method, small particles similar to coarse sand spall off the diffuser, leaving the surface almost as smooth as before. When looked at through a microscope it is seen that the fracturing takes place right through the granules and bonding material; although it varies slightly up and down, it consists of individual glassy-smooth surfaces with sharp edges at openings. In the opinion of the writer, these smooth surfaces tend to retard the attachment of sewage matter to the diffuser, and the sharp edges tend to shear off air bubbles, which stay smaller.

When the diffusers are spalled deeply, a fillet forms naturally at the edge of each diffuser and thus the bond to the grout remains practically the same.

To perform the spalling operation, we use an oxy-acetylene blowpipe with a special, in-line, multi-jet heating head giving a high temperature of about 5,000° F. for quick heating of the surface. Small nozzle openings spaced close together fix the application of the heat in a line across the diffuser with a minimum area of contact. The intensity, position, and travel of the flame are under full control of operators.

The total cost of thermal spalling at Wards Island, including new equipment and reconditioning of equipment after use, was $16,675. Adding the cost of jet washing to this makes the total cost $24,675.

Since the useful life of the diffusers was more than doubled, based on total air passed, the above expenditure represents a saving of at least $75,000 over the total cost of thermal spalling plus jet washing when compared with the cost of replacing the clogged diffusers with new ones. Furthermore, with an average reduction in pressure of at least one pound when compared with the previous clogging rate of new diffusers, the power saving for the two years because of the spalling and jetting amounted to at least $51,000.

With the diffusers in good condition, an adequate air supply has contributed to the treatment of more sewage with better results.

It should be kept in mind that conditions will vary in different plants and with different makes of diffusers and different porosities. Therefore, a study of local conditions should always be made so that the proper and most economical procedures may be followed.

The writer wishes to express his appreciation to Mr. Richard H. Gould, Director of the Division of Sewage Disposal in the New York City Department of Public Works and to Mr. Nathan I. Kass, Chief of the Bureau of Sewage Disposal Operation, for their confidence and faith which resulted in the progress from theory to actual contracts involving fairly large sums of money. Credit also goes to the Linde Air Products Company, and to various members of the Bureau of Sewage Disposal Operation, for their cooperation in the successful carrying out of the spalling project.

Efficiency Outweighs Cost in Centrifugal Pumps

GENERALLY, a purchaser can afford to pay 10% or 15% more for a centrifugal pump initially for each 1% increase in efficiency that the manufacturer guarantees. This opinion was expressed by L. R. Howson of Alvord, Burdick and Howson, Chicago consulting engineers, at a recent waterworks meeting held at Northwestern University.

Engineers generally evaluate bids for pumping equipment on the basis of annual cost, including fixed charges (interest and depreciation on the cost) and an estimate of the power cost based on the respective efficiencies guaranteed by the bidders. For high-lift pumping equipment, the cost of power far outweighs the interest and depreciation on the first cost. Usually, where operation is relatively constant, the power cost will outweigh the fixed charges by a ratio of 10 to 1, more or less. From this, Mr. Howson arrived at his figure justifying 10% or 15% more in first cost of each 1% increase in efficiency. Thus, if one manufacturer offers equipment of 70% over-all efficiency and another 75%, the latter unit under reasonably continuous operating conditions will justify the expenditure of 50% to 75% more in initial cost. He has rarely found first-cost differences greater than between 10% and 25%, and has commonly found ranges in efficiencies more than 5%.

Pumping units should be discarded or relegated to reserve status when their efficiencies drop, he urged. Those smaller than 3 mgd, requiring more than 500 kw-hrs. per million gallons pumped 100 feet high, should be discarded. Similarly, pumping equipment in the 6-mgd to 10-mgd range are uneconomical when they require more than 475 kw-hrs. per million gallons pumped against a 100-foot head.

These figures apply only to pumping equipment in regular operation. Pumps operated only from 10% to 20% of the total hours can be obviously economically retained in service, even if somewhat less efficient.

New Jersey State Law Makes Open Dumps Illegal

NEW JERSEY is the first state to outlaw the disposal of decayable garbage on the ground in open dumps. This action was taken as part of its civil-defense program. In item 7.50 of the state's civil-defense plan passed by the legislature, there appears a regulation that reads as follows:

The maintenance of sanitary conditions in local communities is basic to a successful program. Food supplies must be protected, garbage and refuse shall be removed from premises, and garbage should be kept in metal containers. If garbage and trash are to be disposed of on land, the sanitary-landfill method shall be used, effective immediately, to eliminate the breeding and maintenance of rodents and insects.

New Jersey Health Department officials do not contemplate a broadside program to require immediate compliance. But they do expect that this law, together with instructional work among the municipalities, will soon eliminate the unhealthful open dump in New Jersey.

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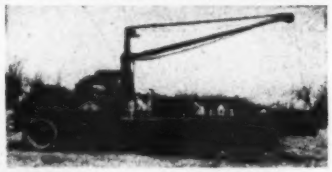

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Street Construction and Maintenance

(*Continued from page* 121)

Department of Public Works. Some of the tests showed doubled inlet capacity.

Sidewalks

Sidewalks should be placed where the pedestrian likes to walk. This is the logical reasoning of Frank Harley, Civil Engineer, of Fair Lawn, N. J. His experience indicates that this distance is from 3 to 10 feet from the curb. Trees, he recommends, should be from 5 to 10 feet between curb and sidewalk.

Hartford, Conn., noted the deterioration of sidewalks after the severe winter of 1947-8, and decided that alternate freezing and thawing caused the trouble. Royal Thompson, Director of Public Works at that time, decided on an admixture that would repel the moisture and thus prevent the scaling. He selected Hydropel, a product of the American Bitumuls Company, of San Francisco, Calif., after studying tests made at Stanford University and at the University of Maine. These tests showed that Hydropel reduces the absorption by about two-thirds and gives the concrete increased durability.

The material is an emulsion of asphalt and water. It adds approximately $3 per cubic yard to the cost of the sidewalk. The Hartford specifications require about 1½ gallons of the admixture to a sack of cement for ordinary concrete. For sidewalk topping, ¼ gallon is required. Lampblack or other coloring material may be used also. [7]

To resurface deteriorated sidewalks, Kansas City, Mo., uses an asphalt-aggregate mix known as "Plastic Rock" applied ¼-inch thick. Stanley Palmer, Assistant City Engineer, reports that it is easier to walk on than ordinary concrete. Plastic Rock is a product of United Laboratories, Cleveland, Ohio.[8]

With the obsolescence of the streetcars, many cities are faced with the need to remove the unused streetcar rails. Several methods have been developed that work well.

In general, the rails are imbedded in brick. Wausau, Wis., used a single scarifier tooth on a grader blade and tore the bricks loose from between the rails. The same grader was then turned transversely to the track so that the same tooth could rip the rails loose from the ties. Half the bricks were undamaged and could be used for other purposes. Damaged bricks were crushed and used for various street construction purposes.[9]

Birmingham, Ala., removed rails by building a rail puller consisting of two I-beams set 9 inches apart and pinned to the boom of a crane. The crane cables worked a block-and-tackle that pulled out the rails.[10]

In Reading, Pa., the rails were pulled out handily, two at a time, by a pair of hydraulic jacks mounted on a frame built to be pulled along the pavement. The machine was developed by Rodgers Hydraulic Corporation, at St. Louis Park, Minneapolis, Minn. The jacks are operated through a hydraulic pump powered by a gasoline engine mounted on the frame. On an average, it was able to remove 1,400 feet of track in an 8-hour day.[11]

Street Construction Financing

In general, street construction and maintenance seem overlooked when the highway-user dollar is apportioned. In 1949, the United States Bureau of Public Roads compiled data to show that 11% of the imposts raised from highway use, such as gas tax, license fees, etc., was spent on city streets. The bureau, in previous studies, has reported that more than half the motor-vehicle travel is on urban streets. This means that more than half the highway-user funds come from travel on urban streets that are supported by only 11% of these funds.

The 1949 figures represented an improvement over the previous years. In 1948 the highway-user collections reached $2,000,000,000. Cities received directly $109,000,000, or only 5% of the total. In addition, they received about $124,000,000 in state-constructed highways. About 21% was spent on construction and maintenance of county and other rural highways; 54% was spent on state highways outside cities; 9% was diverted to non-highway purposes, and 4% went to administrative costs.[12]

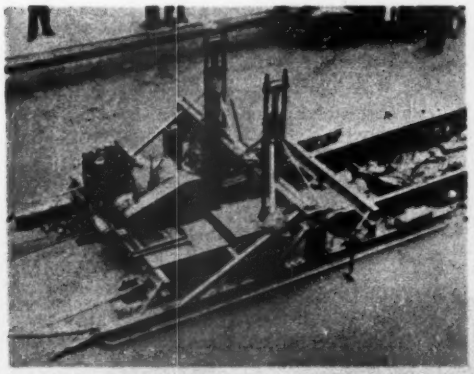
In general, the residential, or light-traveled portion of the street system gets little aid from the highway-user funds, and must rely on special assessments against the property benefited. Methods vary in the way that these assessments are determined.

For example, in Columbus, Neb., 51% of the property owners on a front-foot basis petition for a paving district. The property owners set a price per lineal foot that they are willing to pay. After a 20-day remonstrance period, if 51% object to the project, the work is not undertaken.[13]

In Mishawaka, Ind., property owners sign an order authorizing pavement work. On the order is an estimate of the cost. Owners agree to pay in 12 months. Only 6% have been delinquent.[14]

Oklahoma City makes assessments for street paving by assessing against the entire city block. The first third of the block from the corner of the street being paved pays 50%, the next third, 30%, and the final third, 20%. The cost of paving an intersection is spread over a quarter of each block abutting the intersection to be paved.[15]

Pontiac, Mich., used a special-assessment method to raise funds for what



This hydraulic jack arrangement removed rails from the streets of Reading, Pa., both quickly and efficiently.

The Public Works Department, Kalamazoo, Mich., makes good use of the curb-and-gutter paver pictured above.

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Advertising Federation of America

(*Continued from page* 175)

normally might be considered a maintenance program—recapping an old concrete base with asphalt, as well as a certain amount of new construction.[16]

Detroit, Mich., arranges its paving-assessment program so that property with the long dimension of the lot abutting the street to be paved is not penalized. These "side-frontage" lots pay only 35% of the paving cost. Of the remainder, 50% will be paid by the city and 15% by all lots that are situated within a half block of the street. Assessments are payable in four annual installments with interest at 6%. Street and alley-intersection paving costs are borne by the city in the Detroit program.[17]

The "Side-Frontage" Lot

Toledo, Ohio, also takes into account the plight of the "side-frontage" lot. Under its plan, the corner-lot owner pays his share for the pavement on the front street where the narrowest portion of the lot faces, and pays only one-third of the cost for the side street adjacent to the long portion of his lot. The remaining two-thirds of the side-street paving is met out of city funds derived from the income tax, the gasoline tax, and the auto-tag tax. The city, in addition, pays the cost of paving the intersections.

The city also has a repaving policy. If the property never has been assessed for paving, the city requires that the property owner pay 98% of the paving cost, less the cost of intersections. The city pays the remaining 2% plus the cost of intersection paving. If the property has once been assessed, the repaving charge is fixed at 50% for the property owner with the city paying the remainder of the levy.[18]

Manner of Payment for Sidewalk Construction Varies

Variation also exists in the payment for sidewalk construction. Arthur Richards, Village Engineer, of Larchmont, N. Y., reports that sidewalks are paid for in the following manner in Westchester County, N. Y.

	Firm cost by property owner	*Municipal*	*Shared*
Cities	100%	0%	0%
Villages	52%	24%	24% *
Towns	100%	0%	0% †

For repairs and maintenance, property owners pay all in cities and towns, but share the cost in the villages.[19]

In most cities, sidewalk maintenance is the responsibility of the community, but in Sweetwater, Texas, the obligation is placed on the property owner by a special ordinance.[20]

* Two villages pay 50%. One pays 15%. Two pay labor only.

† Under the New York Town and Highway Law, if a district is formed, the abutting property owner pays 50%, the other owners in the district pay the balance.

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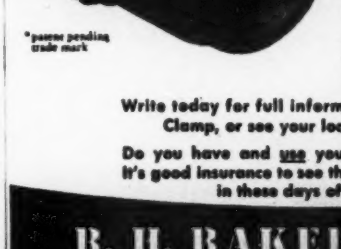

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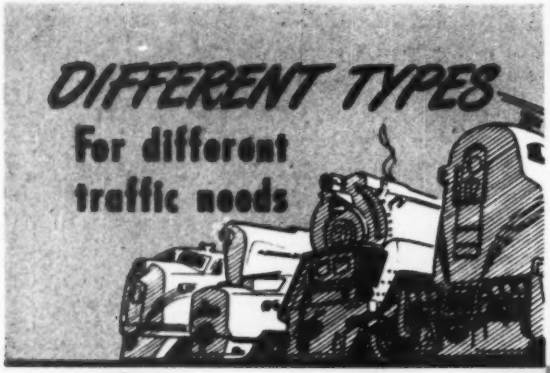

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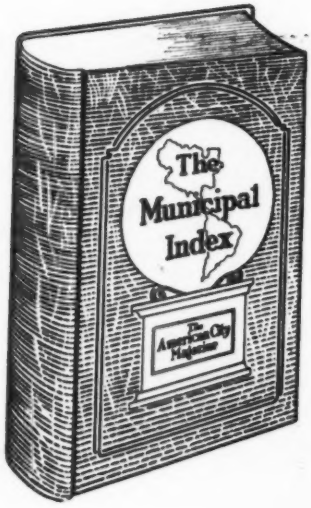

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In the municipal offices of almost every large city, and in thousands of smaller towns and villages, from one to five or more copies of this yearbook are to be found on officials' desks or library shelves.

If you are a subscriber for the monthly issues of *The American City*, you may have the 1951 MUNICIPAL INDEX AND ATLAS on your own desk. If not, may we suggest that you locate the book on some other official's desk and borrow it from time to time?

If your search discloses no copy of the 1951 edition in your City Hall, please write us a letter and if copies are still available we will send you a complimentary copy.

Municipal Index, 470 Fourth Ave., New York 16, N. Y.

Government by the People

(*Continued from page* 107)

a serious situation that recreation for children, gardening, and outdoor activities were curtailed to certain daytime hours. There was a lot of curbstone conversation about the town's plight but there was little action.

Then a community counsellor conducted a clinic in Lonoke. A Community Development Council was the result. The Council's first objective was elimination of the mosquito problem. Twenty-four hours after a unanimous vote for the program, the money needed to carry it out was collected.

Today, Lonoke is free of mosquitoes. Because of the Council's success, Lonoke citizens are undertaking major projects such as a community swimming pool. There is little doubt the project will succeed.

● Dardanelle, an historic old community, had slowly declined in wealth since the railroad replaced river transportation. During World War II, a man with paying ideas decided Dardanelle didn't need to die. Harold Snyder, a former vocational agriculture teacher, decided that the sandy loam of the county would raise sweet potatoes. He was able to get a small dehydration plant going, and began mixing feed. Then he stimulated a broiler-raising program to provide a market.

During this time, a community counsellor had succeeded in conducting one of the state's most successful Community Clinic programs in Dardanelle. Dardanelle's leadership was aroused, and it wanted to help Snyder with his dream of changing Dardanelle and Yell County into a poultry and livestock capital.

Community Benefits

After Snyder's feed mill burned, he moved the mixing equipment into a new and larger mill. Gradually, the poultry industry grew until in 1950 the money from one million broilers poured into the community.

Now, it was time for a bigger sales outlet. Snyder and associates were convinced the community could support a processing and quick-freezing plant. This small group, put into action through the Community Council, went to work to get the money.

Within a few months, the community put up $50,000. An equal amount was borrowed from a Fort Smith bank. Fox Deluxe Foods, Chicago, a large poultry processor, signed an agreement to lease the $100,000 structure. It will create 200 jobs and pay out to farmers $5,000,000 annually.

When the bank loan is retired by the $13,500 annual rental from the building, the citizens plan to use the balance to "promote agriculture around Dardanelle." Snyder and his supporters think "this ought to make a great dairy country, too."

This is a program that works, if the citizens of a community are willing to give of their time and energy, and a little of their money. It can work in Portland, Maine, and in Albuquerque, N. M.

Wherever the folks recognize that in the final analysis it is up to them to do their own jobs, to plan and solve their own future, to be the masters of their own destiny, we believe that this is an answer. It is no panacea, but a simple, direct, workable people's plan.

Arson Investigators' Seminar at Purdue University

THE eighth annual Seminar and Training Course for Arson Investigators will be conducted at Purdue University, Lafayette, Ind., April 28—May 2, 1952, according to Professor J. L. Lingo, Director of Purdue's Public Safety Institute. Complete details of the 1952 Arson Investigators' Seminar are available on request.

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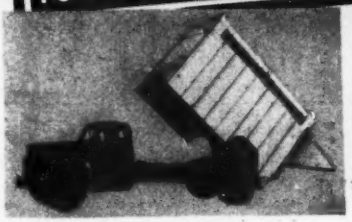

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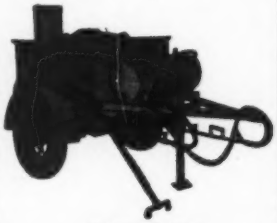

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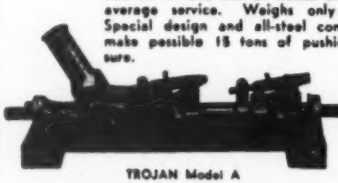

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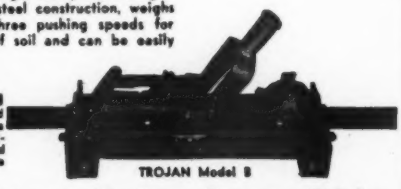

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DICKINSON

Institutes and Area Meetings

(*Continued from page* 111)

held, also fairly well attended by municipal officials. For example, each year we have a state-wide safety conference. Several members of our staff participate in various group sections in arranging portions of the program of this conference, depending on the groups of officials that happen to be interested.

JOHN H. HUSS
Director

League of Minnesota Municipalities

As far as we can tell now, our activities in this field will not differ greatly during 1952 from our past practice, which has been as follows:

We have co-sponsored with the University of Minnesota and other interested professional and state agencies the following short courses: water school, sewer school, city engineers' school, assessors' school, finance officers' school, and councilmen's school. Our regional meetings have been held each fall for the past 16 years. In the fall of 1951, meetings numbered 17 and attracted attendance from 272 municipalities (1,270 people, not including League staff and state officials).

Our past experience indicates that the attendance at short courses and regional meetings has increased slightly and gradually each year.

C. C. LUDWIG
Executive Secretary

Missouri Municipal League

We are presently engaged in organizing regional or divisional groups within the framework of the League. These divisions will meet quarterly and their program will consist of formal and informal discussions of current problems. In addition, functional groups are being organized for training and for discussions of problems peculiar to each. Eventually the divisions and the functional groups will select members of their group for membership on the Board of Directors of the League itself.

The League, along with other interested institutions and organizations, has been holding conferences and schools for several years. Fire schools and traffic clinics have been stressed recently and sponsoring groups include the State University, State Highway Department, State Patrol, Underwriters, and others—including, of course, the League.

All meetings of any kind have been for the purpose of raising standards and techniques and for promoting generally better municipal government. Our experience has been that if you offer a real opportunity for those in attendance to secure information that will help them do a better job, they will come. With the experience we now have had, we feel that improvement in our offerings will result in still better attendance and interest.

Attendance at regional meetings has ranged from 35 or 40 to around 85, while our instruction institutes and clinics have

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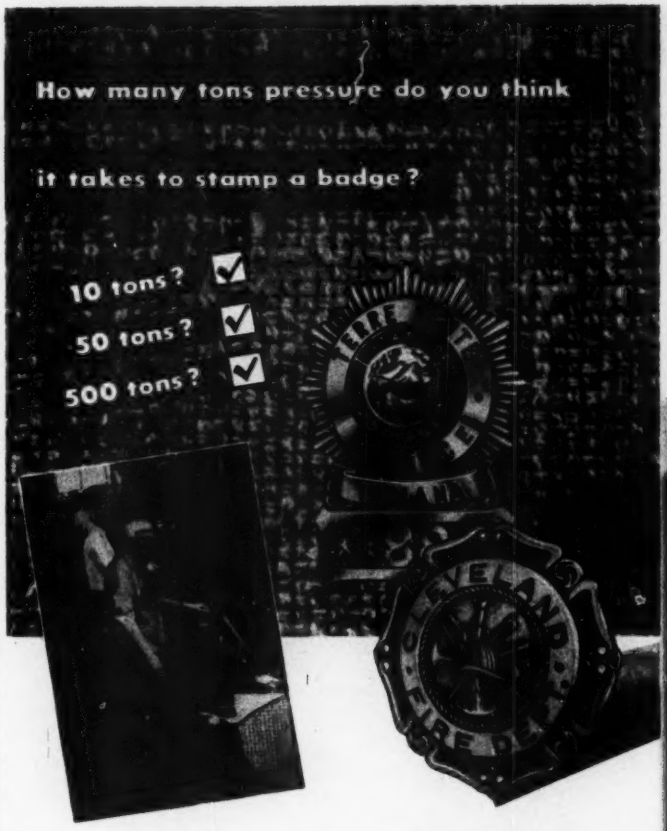

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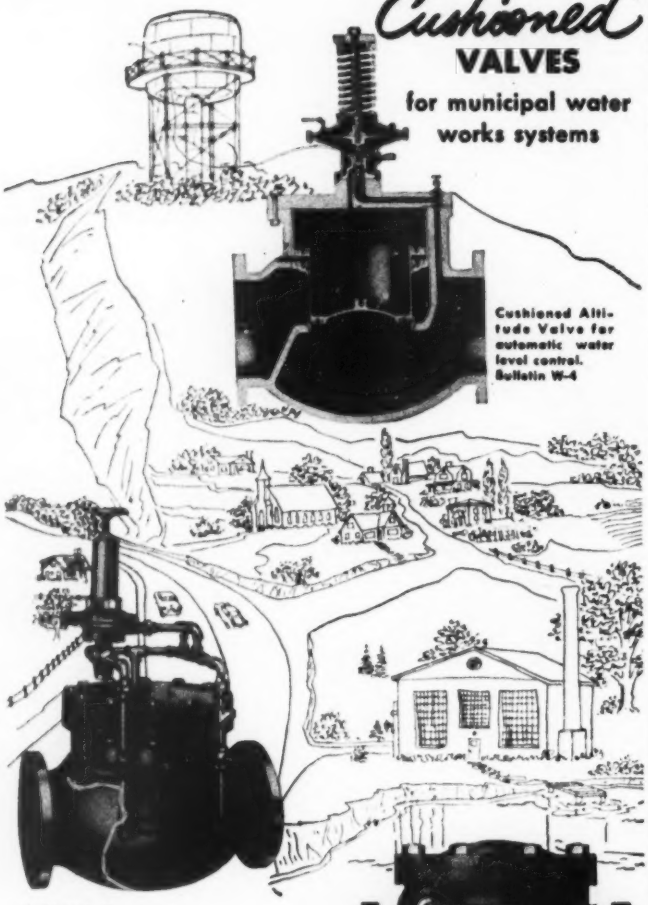

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(Continued from preceding page)

run well over the 100 mark several times, and as these are special groups we have not been too disappointed.

BRUCE J. CARL
Executive Director

Montana Municipal League

The activities of the Montana Municipal League for 1952 will be confined to two major issues, both of which we hope to have on the ballot in November: (1) A proposed constitutional amendment (approved by the 1951 Legislature) to permit the election of municipal officers for a four-year term of office; (2) A proposed initiative to divide the motor-vehicle license-plate fees between the counties, cities, and towns.

To further the efforts of the League on these two projects, regional or district meetings are being planned in each of our 10 districts. Each district has a chairman who is also one of the directors of the League. Montana's 120 incorporated cities and towns are divided into these districts. Many items of particular local interest are discussed at these regional meetings, as well as are League policies and plans. Much has been accomplished through better acquaintance, closer contacts, and united action.

C. H. BREWER
Executive Director

League of Nebraska Municipalities

It has been our practice to hold regional meetings, special schools, and courses for the different city officials over the state each year. In order to have a change from the routine, it was decided that for 1951 we would dispense with this service and arrange to meet personally in each of the towns over the state.

For 1952 we are going to continue our accounting service and hold fire schools and utility schools for the utilities operators and other officials that care to attend. We are planning a three-day high school for our firemen, and five regional schools for practice demonstrations and training. We have already scheduled three utilities conferences for practical training of all utilities operators and employees. We are not sure yet what schooling will be given on the anti-pollution of streams in our state, but chances are that something will be done on this during the year.

The attendance at all the meetings and regional schools is exceptionally good and a lot of interest is shown.

We have an auditing service set up within our League that is very much appreciated by the cities. The League's auditors are qualified not only to make the audits, but to counsel with city officials for more efficient handling of their finances. The city officials prefer the services of the League to commercial auditing. The reason seems to be that commercial auditors are not familiar with municipal laws and regulations.

C. E. BEALS
Executive Secretary-Treasurer

New Jersey State League of Municipalities

Besides the general sessions at our annual conference, sessions are held by the

13 organizations affiliated with the League.

The New Jersey State League of Municipalities does not sponsor any courses or institutes directly. However, we are the cooperating agency in sponsoring in-service training courses at Rutgers, the State University of New Jersey, and Stevens Institute of Technology, in Hoboken.

The League does not hold regional meetings. Such meetings are held by the county Leagues, which are organized in the following counties: Atlantic, Burlington, Cape May, Mercer, Middlesex, Monmouth, Morris, and Somerset. These county Leagues hold one or more meetings each year; the meetings are of a combination business-social nature.

A course for training municipal police officers is currently being given by the New Jersey State Police in cooperation with the Federal Bureau of Investigation, the New Jersey State Chiefs of Police Association, and the New Jersey State League of Municipalities. A similar course will be given in January-February, 1952.

JAMES J. SMITH
Executive Director

New York State Conference of Mayors and Other Municipal Officials

Regional Institutes: The Conference of Mayors of New York State feels that the regional institutes which it conducts each fall are mutually beneficial—to the registered official and his municipality and to the Conference and its staff. These institutes present an opportunity for the Conference staff to hear about practices and techniques employed by the municipalities about which it is not aware. Another very important factor is the opportunity for the officials to suggest and present legislative proposals.

At the present time the Conference is considering holding early evening and dinner meetings instead of the usual day sessions. However, no definite decision has been made. It is also contemplated that a few more regions be added for the 1952 series to the 12 which we have had for the past several years.

Training Schools: In cooperation with the Bureau of Environmental Sanitation of the State Department of Health, the Conference will again hold schools of three days each for Grade III sewer and water employees. These may also change in pattern during 1952. We have for the past several years held the schools during one week in the early spring in Albany. It may develop that we shall hold three or four special regional schools in order to get a larger total attendance.

We shall also, in cooperation with the Bureau of Environmental Sanitation, hold schools for Grade II sewer and water officials. These are highly technical schools of two weeks duration, held at one of the larger colleges or universities. Before an operator of a sewerage or water plant receives his Grade II certificate as established by the Public Health Council, he must pass an examination at one of these Grade II schools.

We shall conduct a school for city and village clerks in conjunction with our annual meeting at the Lake Placid Club next June, and in the fall, in cooperation with the Federation of Planning Officials, conduct a school for planning and zoning officials.

MORGAN STRONG
Director

North Carolina League of Municipalities

The North Carolina League of Municipalities conducts regional meetings every other year in the spring. The reason we hold them every other year is because of the difficulty of organizing them in a municipal-election year. Our plans call for at least 13 regionals during 1952, so planned that no official will have to travel more than 50 miles to attend. We find these meetings very effective and consider them our best means of really handling "grass-root" municipal-administration problems. These meetings are conducted by members of the League staff and are composed of lectures and question-and-answer periods. Attendance is exceptionally good and so is the participation in the discussions.

In addition to our regional meetings we co-sponsor special institutes conducted by North Carolina State College and, when called upon to do so, with the Institute of Government of the University of North Carolina in Chapel Hill.

DAVETTA L. STEED
Executive Secretary

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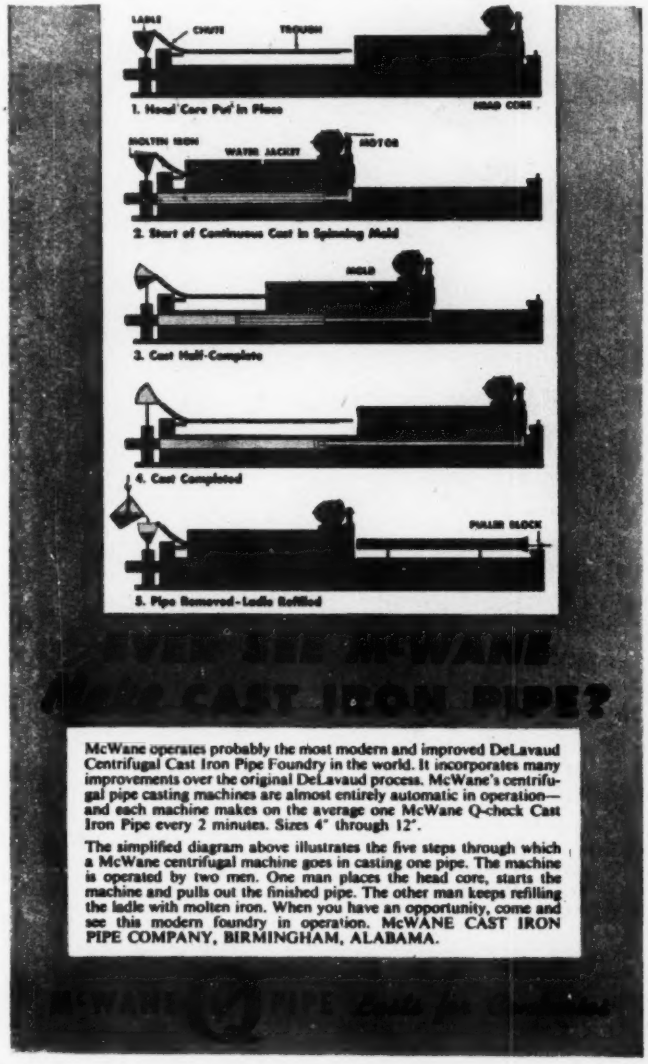

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(Continued from preceding page)

League of North Dakota Municipalities

We anticipate that during 1952, in addition to our annual convention, there will be the following:

1. District meetings, held for all city and village officials to discuss general local governmental problems, in nine cities. These will be short evening meetings starting with dinner, which will be followed by a short talk by a League official, and then a general discussion.

2. A Municipal Officers' conference conducted by the University of North Dakota in May. These conferences will cover two days and will probably be broken down into sections covering (1) mayors, councilmen, commissioners, and trustees; (2) finance officers; (3) assessors, and (4) attorneys.

3. Another series of district meetings to be held in October, November, and December, devoted principally to the legislative program to be submitted to the 1953 Legislative Assembly.

District meetings held in the past have been very well attended, particularly by officials from the smaller cities and villages who find it impossible to attend the annual convention. We believe the University will develop these conferences into very good training schools and probably expand the number of functional groups.

MYRON H. ATKINSON
Executive Secretary

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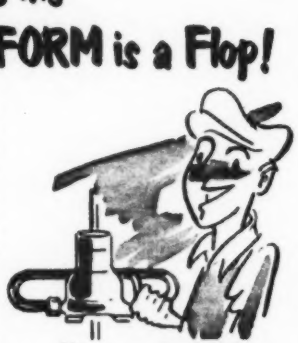

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League of Oregon Cities

Each spring the League of Oregon Cities sponsors a series of 20 to 22 regional meetings throughout the state. The formal part of the program varies from year to year, but about 50% of each meeting is devoted to questions and the exchange of information among the group. These meetings have been well attended and have undoubtedly been of real value to city officials attending, especially new city officials. They are helpful also to League officers and staff.

Each February the League cooperates with the International City Managers' Association in sponsoring a two-day meeting of the city managers of Oregon.

The League has cooperated with the city and county police groups for a number of years in sponsoring some basic-training schools for newly appointed police officers each fall, and advanced schools each spring.

Last spring the League sponsored a one-day training program for municipal judges. This resulted in the development of a new section of the League, and our office will continue to work with this group in developing a training program.

During the year we cooperate with various groups and organizations in sponsoring training programs, institutes, and conferences dealing with fire fighting and fire prevention, street and road construction and maintenance, traffic control, water supply, sewage disposal, etc.

HERMAN KEHRLI
Executive Secretary

Municipal Association of South Carolina

Our program has been somewhat the same for the past several years and we expect to continue it in 1952. The Association holds an annual meeting for two days in February or early March. In the fall of the year we sponsor a series of regional meetings throughout the state. Each meeting begins at 2:30 and is followed by a fish fry, barbecue, or dinner of some kind. This allows time for fellowship with other city officials.

The program at the regional meetings during 1951 has consisted of reports from six committees: Civil Defense, Public Relations, Highway, Insurance, Social Security, and Home Rule. These committees met during the summer and studied the subjects assigned to them.

J. N. CALDWELL
Secretary

South Dakota Municipal League

Our experience with regional and district meetings for municipal officials has not been very satisfactory. The attendance has generally been small and our Executive Committee has questioned the wisdom of the expenditure of funds to continue them.

We have not had a great deal of experience in holding short courses for officials. For the past two years we have had a course for assessors and we believe the attendance has justified its continuation.

R. D. FALK
Secretary

League of Texas Municipalities

Our League will conduct eight regional meetings in eight different sections of

Texas during the spring. We find that these meetings reach approximately twice as many city officials and cities as does our annual convention.

Our League has quit the business of conducting training schools as such, because we have been able to get the state to take these training schools under its adult-education program through the colleges and universities.

E. E. McAdams
Executive Director

Utah Municipal League

The Utah Municipal League, in cooperation with the State School Office, sponsors 10 regional meetings throughout the State of Utah each year. These schools are held in different communities, so that traveling can be held to a minimum. A panel of six or eight municipal authorities conduct the regional meetings in more or less of an open-forum-discussion type of conference. They are considered very successful and our attendance increases each year.

A second project, sponsored by this organization in cooperation with the Engineering Department of the University of Utah and the State Department of Health, is the annual Municipal Water Works and Sanitation School of the University. This project is only two years old, but it is well attended by our water and sanitation and sewer-works operators.

A third project—a school for city and town recorders—has been arranged with the Institute of Government at the University of Utah for some time in April 1952. This project will be our first for these special groups.

These special conferences for particular groups are very helpful in raising the standards and improving the techniques of our various departments of municipal government and we expect to sponsor other schools for special operators in the future. At the present time, we are considering a school for street-department operators which we feel is needed in order to improve the standards of municipal street construction and improvement.

Tom McCoy
Executive Director

League of Virginia Municipalities

While the League of Virginia Municipalities for years has cooperated with the State Department of Education in conducting schools or short courses for policemen, firemen, building inspectors, weights and measures officials, finance officers, welfare officials, and other groups of the local-government personnel, we have not held regional meetings for several years.

Our schools or institutes have always been well attended and, in my judgment, are a worthwhile activity of any league of municipalities. Our regional meetings were always well attended also, but they were discontinued because of the frequency of other meetings.

Harold I. Baumes
Executive Secretary

Association of Washington Cities

This Association contemplates holding its annual series of regional meetings during September and October of 1952. At our 1951 meetings last fall, 1,083 municipal officials, representing 144 cities, attended. We feel that these meetings serve three very valuable purposes in that they:

(1) Afford the staff an excellent opportunity to become better acquainted with the cities' problems;

(2) Form the basis of the cities' recommendations to the Executive Committee of the Association which are made a part of the official declaration of policy, and

(3) Bring the various city officials together for the purpose of discussing their mutual problems.

Although the itinerary for the 1952 series has not been completed, we expect again to schedule from 20 to 23 meetings in various parts of the state next fall.

George D. Smith
Assistant Executive Secretary

West Virginia League of Municipalities

We plan to hold congressional district meetings during 1952, since this is our legislative year. Four years ago we had similar meetings, which proved quite successful both in discussions and attendance.

There will probably be six sectional meetings, this being the number of vice-presidents in the League association, one to be held in each of the following cities: Wellsburg, Clarksburg, Martinsburg, Bluefield, Logan, and Huntington. These meetings will be held in the early spring before the annual spring meeting.

Pat E. Maloney
Executive Director

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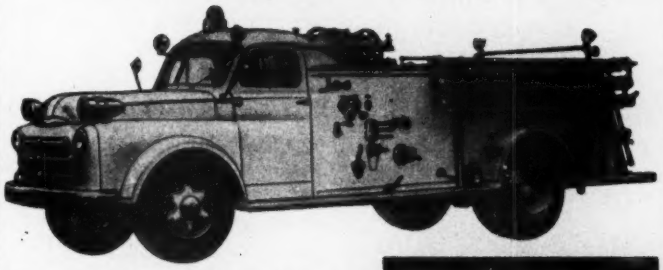

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We take responsibility for entire unit—

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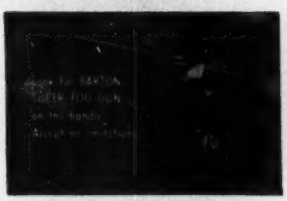

On your AMERICAN engine, you get BARTON SUPER-FOG equipment—for the most effective fire-fighting fog known. Lays down a perfect fog blanket—at various ranges—with astonishing ease of control and freedom from hydraulic shock.

Choose your favorite make of truck chassis... we'll complete your unit with careful pride in every detail of construction and workmanship. These things, plus many special features, assure you of *extra* fire-fighting power and *extra* dependability when you choose AMERICAN. Write for literature and name of nearest representative.

American FIRE APPARATUS CO.

P.O. BOX 1024 • MAIN ST. ROAD • BATTLE CREEK, MICHIGAN

(Continued from preceding page)

League of Wisconsin Municipalities

Our plans for training courses and institutes during 1952 are not complete. However, it is certain that our League will be the sole sponsor of training courses for assessors, building inspectors, and clerks and finance officers during the year, whatever other plans we may have.

We will also join with other agencies in sponsoring training courses for plumbing inspectors and water-works superintendents. The latter course is given in alternate years, with the course for sewage-plant operators being conducted in the odd-numbered years. Likewise the League joins with other agencies in sponsoring a training course for swimming-pool operators in odd-numbered years.

League sections also conduct institutes in the fields of parks and recreation, public works, and public welfare (relief). These eventually may be changed into training courses but have not quite reached that status yet.

Various other training courses are under consideration, but final decisions have not been made.

We are tentatively scheduling planning institutes for March. We also expect to hold regional meetings throughout the state in May. Our annual convention is scheduled for October.

FREDERICK N. MACMILLIN
Executive Secretary

WARNING
FOR AIR CONTAMINATION
USE
Bendix-Friez
WIND EQUIPMENT
TO DETERMINE
SAFE AREAS
AND DIRECTIONS FOR
EVACUATION
After a bomb strikes, dangerous elements are left in the air to drift and spread with the wind. Accurate knowledge of wind and weather conditions are vital to the proper handling of people to be evacuated from areas already contaminated or liable to become so because of wind direction and velocity.
INSTRUMENT DIVISION of
Bendix
AVIATION CORPORATION
1360 Taylor Avenue
Baltimore 4, Maryland
Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

Ask for More Emergency Disinfection Equipment

WATER-WORKS OFFICIALS in New York State went on record at their recent annual meeting recommending the purchase by the New York State Civil Defense Commission of at least four additional emergency chlorinators mounted on suitable trailers to be located at strategic points for emergency use in civil defense. At present, four such units are now available in the state, primarily for use in three large cities that are presumably target areas.

These same water-works officials also went on record as asking the Civil Defense Commission for full cooperation between the water-supply sections of the Public Works Organization of the commission and the zone coordinators and others appointed under the provisions of the law setting up the mutual-aid water-service program.

Mercury Lights On Valley Highway

THE first section of the Valley Highway at Denver, Colo., is lighted by 289 mercury-vapor lamps housed in General Electric luminaires. The section is 2¼ miles long. The complete freeway will extend 12 miles from the north to south city limits and will have more than 1,200 lights. Clover-leaf type intersections and 0.83 foot-candles initial average illumination over the entire 98-foot width will contribute to making it the best lighted highway in the state.

Thirty-foot Union Metal poles, with 15-foot bracket-arms, place the 15,000-lumen lamps well out over traffic lanes, on a spacing of 90-foot staggered arrangement. All wiring is underground, circuits 6.6-ampere constant-current series. Transformer facilities and switchgear are all housed in vaults under bridge approaches.

Construction of the $76,000 lighting program was by the Public Service Company under a service agreement with the City and County of Denver. It will provide power and maintenance but the city will absorb the entire operation and maintenance expense. Since the highway will be much more extensive than the portion within the city limits, the initial cost is divided three ways—between the city, state, and federal governments.

Although Colfax Avenue, U. S. 40, is also vapor lighted and over 14 miles long, the Valley Highway is unique in that it is without intersections, traffic signals, or shops normally present on such a well-lighted thoroughfare.

May we lend a hand

and help you obtain –

MANUFACTURERS' LITERATURE

If you need information or catalogs about ANY type of municipal equipment or service, you'll find our reply card below a convenient time-saver.

If you need such information, use this business reply card. It needs no stamp. Just drop it in the mail.

Business Wanted by Advertisers

BUSINESS REPLY CARD

THE AMERICAN CITY MAGAZINE

470 FOURTH AVENUE

NEW YORK 16, N. Y.

Free Catalog Supply Service

For readers of THE AMERICAN CITY

When checking equipment in this issue of THE AMERICAN CITY, your attention is directed to these sections:

1. **The catalog listings, to be found on pages 25, 26, 29, 34, 187 and 188. Each listing has a number. Write the numbers of the catalogs you wish to receive on the reply card below.**

2. **The "Municipal Purchasing News" section, pages 189 through 209, where descriptions and illustrations of equipment and services are to be found. If you need additional information on any of these, jot down on the card the name of the product and its manufacturer.**

In addition, should there be equipment not mentioned in this issue about which you would like information—such as manufacturer's name, source of supply, etc.—make your inquiry on the card. We'll do the rest.

To THE AMERICAN CITY's Catalog Supply Department,

Please send literature on items numbered as follows, circling on page 25:

.....

.....

Please send me further information on the following products described in this issue:

.....

.....

I would like to receive also manufacturers' booklets on:

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NAME .....

TITLE .....

ADDRESS .....

.....

1-52

Fill in the attached card—tear off along dotted lines, and drop in mail-box.

Obtain this Literature Free of Charge!

Write directly to the manufacturers or use the coupon on page 25

(*Continued from page 34*)

These Folding Chairs Are Comfort-Curved

370 Samson folding chairs provide comfortable, low-cost public seating for churches, schools, hotels, business firms, and institutions, reports the Shwayder Bros., Inc., Public Seating Division, Detroit 29, Mich. The chairs are comfort-curved for ease, made of welded, tubular steel, bonderized for weather resistance, and finished in durable baked enamel.

Self-Stoking Incinerator

371 The mechanically stoked Morse Boulger incinerator is described in a new Bulletin 111-B. The difference between a stoker incinerator and a cell-type incinerator is the cylindrical main ignition chamber with stoker mechanisms, bringing the burning rate up to about 100 pounds per hour per square foot of combined hearth and grate area. Installations range from Carmel, N. Y., to Pomona, Calif. Bulletin 111-B is available from the Morse Boulger Destructor Co., 205 E. 42nd St., New York 17, N. Y.

One Man Replaces Five When Using this Rammer

372 According to the Barco Mfg. Co., 1801-1815 Winnemac Ave., Chicago 40, Ill., one man does the work of five when employing the Barco rammer for soil compaction close to walls, culverts, and abutments in trenches and ditches. The equipment works on a new and scientifically proved principle of heavy, thrusting impact to produce deep, penetration compaction. The Barco Rammer can produce specified compaction with lifts of 12 to 20 inches when ordinary tampers are limited to 4 inches or less.

Lubricated Plug Valves

373 American Car and Foundry lubricated plug valves give a well-proportioned, round-cornered, full pipe-area port opening. The lubricant protects against wear and abrasion, there is no exposed seating surface, and the valves can be installed in any position. Among the plants employing this equipment are chemical, and sewage, asphalt manufacturers, and gas works and distribution systems. *Catalog 4-C* may be obtained by writing to the American Car and Foundry Co.'s Valve Division, 1501 E. Ferry Ave., Detroit 11, Mich.

Makes Water Filters Perform Better

374 Anthrafilt, produced by the Anthracite Equipment Corp., Anthracite Institute Bldg., Wilkes-Barre, Pa., is a filter medium that the records show puts performance in water filters that never was there before. The material, consisting of pulverized anthracite coal, lengthens filter runs, does a better job of removing impurities, solves certain taste and odor problems, and increases filter capacity. In addition to city water filters, Anthrafilt is equally good for swimming pool filtration.

Cement-Mortar Lining For Water Pipes

375 The Centriline process is a centrifugally applied cement-mortar lining of pipes that can be placed without removing them from the ground. It consists of throwing premixed cement-mortar by centrifugal force, at a uniform high velocity, against the inside surface of the pipe, and then mechanically troweling this lining to a smooth, even finish. According to the Centriline Corp., 140 Cedar St., New York 6, N. Y., this method extends pipe life indefinitely, reduces maintenance costs to a minimum, and prevents ground-water infiltration in sewer and drain lines through joints or porous pipe.

Centrifugal Pumps

376 The Morris Machine Works, Baldwinsville, N. Y., has recently issued Bulletin 183 describing its centrifugal pumps. This describes the company's solids handling pumps, large mixed flow, and large axial flow pumps, hydraulic dredges, and specialized centrifugal pumps. The Morris Type DS double-suction pumps handle clear liquids and are available in sizes from 1½ to 24 inches. Among the other pumps are those for handling sewage and refuse.

Visible-Flow Chlorinators

377 You can get chlorine feeders in three volumetric models for any chlorination service when you order Chlorinizers produced by Builders-Providence, Inc., 358 Harris Ave., Providence, R. I. The manufacturer states that its equipment meters and controls chlorine gas in the dry, non-corrosive state, and has only one vital control part, the tantalum-diaphragm chlorine valve with its Hastelloy valve pin, silver valve seat, and enameled valve lining. Write for literature about all three models.

Lubricants for Many Uses

378 Lubricants for locks and parking meters, natural and synthetic rubber, metal, wood, rubber, plastic, and glass, are made by the American Grease Stick Co., Muskegon, Mich. Lock-Ease is a graphited lock fluid which helps to eliminate coin mechanism and lock failure due to freezing. RuGlyde is a three-purpose lubricant which will not injure rubber or car finishes, and which removes stuck or rusted tires. Door-Ease is a stainless stick lubricant for metal, wood, and other surfaces. Door-Ease dripless oil is employed for body squeaks, hinges, flexible cables, and the like.

Strip Chart Recorders For Water, Sewage Plants

379 Tel-O-Set and miniature strip chart recorders are designed especially for graphic panel use, but can be employed wherever miniature recorders are desirable, reports the Brown Instruments Division of the Minneapolis-Honeywell Regulator Co., Wayne and Windrim Aves., Philadelphia 44, Pa. Sheet 769 illustrates these recorders and describes their method of operation. The sheet includes several views of the recorders as well as dimension and application drawings. When writing for literature, address your query to Station 40.

Tools for Tapering Transite Pipe

380 Tools for tapering and straight-machining transite pipe are made by the Pilot Mfg. Co., 430 Market St., San Francisco 11, Calif. The machining tool features the Pilot Arbor, providing rigid machining with its self-aligning double 3-point contacts principle. A special tool for straight cylindrical machining of transite pipe, it simplifies installations and makes precision cuts. The Pilot tapering tool is especially designed for tapering transite electrical conduits and flue pipe.

Cut Digging Costs With This Machine

381 The new Sherman power digger cuts digging costs, reports the manufacturer, Sherman Products, Inc., Dept. No. 111, Royal Oak, Mich. The company states that its patented, actuated bucket gives selective digging, and all-hydraulic action assures efficient performance. The equipment can be employed for digging ditches, footings, culverts, basements, and other excavations, and handles roots, rocks, hard clay, and oiled street surfaces.

Three-Wheel Street And Road Rollers

382 On request, the Huber Mfg. Co., Marion, Ohio, will send a copy of its new 20-page bulletin, No. H-150, which reports on its general purpose 3-wheel rollers. The manufacturer states that its equipment solves compaction problems efficiently, quickly, and dependably. The rollers are equipped with 18-inch face rolls on the 8-ton units, and 20-inch face rolls on the 10, 12, and 14-ton sizes.

Cast Iron Pipe

383 The Cast Iron Pipe Research Association, 122 S. Michigan Ave., Chicago 2, Ill., reports that a survey conducted by leading water-works engineers revealed that 96% of all 6-inch and larger cast iron water mains ever laid in 25 representative cities are still in operation. Many water and gas mains built with cast iron have 100 years or more of service, and have been able to withstand the traffic-shock of multi-ton trucks and buses, as well as the soil disturbances caused by underground construction of sewers, power lines, telephone conduits, and subways.

For pH Control, Water Analyses

384 Hellige, Inc., 37-18 Northern Boulevard, Long Island City, N. Y., has published a new catalog, No. 600-20, which lists 180 indicator solutions and reagents for pH measurements, water and chemical analyses with Hellige Simplex testers, comparators, and Aqua testers employing non-fading glass color standards. To insure accurate results and minimize expenses, the components of less stable reagents are furnished separately so they can easily be mixed as needed.

Roof Resurfacers

385 The Stonhard Co., 1306 Spring Garden St., Philadelphia 23, Pa., reports that water does not penetrate a roof when repaired with its resurfacers which can be applied to any roof, whether it be of tin, iron, concrete, slag, gravel, tar paper, or of felt. The plastic roof resurfacer protects flashings and gutters, will not run or sag, and requires no heating. The liquid roof resurfacer builds up a protective coating over the basic roofing material and penetrates, filling all open pores and restoring the natural oils needed for surface elasticity.

Controlled Volume Pumping For Chemical Feeding

386 An illustrated publication on controlled volume pumping and Milton Roy controlled volume pumps may be obtained by writing to the Milton Roy Co., 1300 E. Mermaid Lane, Philadelphia 18, Pa. *Bulletin No.* 151 will be of interest to water and sewage plants whose operations call for pumping a controlled volume of chemical solutions in amounts as much as 50 gallons per minute, or as little as 3 ml per hour. Listed is information on Milton Roy pumps for specific applications.

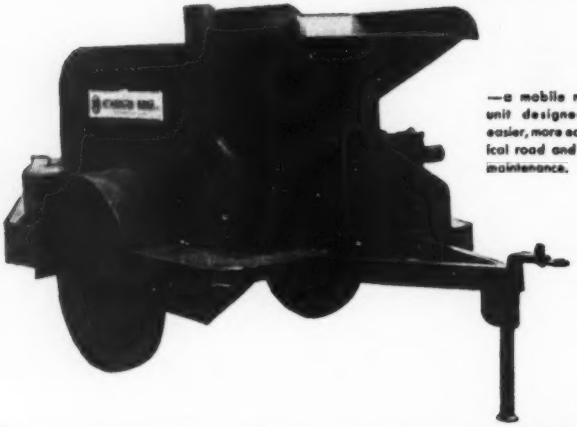
Protective Lining For Concrete Pipe

387 Especially adapted for use in sewage lines and structures exposed to severe corrosive action is the T-Lock Amer-Plate, a sheet lining that provides enduring and economical protection. A product of the Amercoat Corp., of 4809 Firestone Blvd., South Gate, Calif., Amer-Plate is composed of inert resins and plasticizers. It is impervious to gases, highly resistant to most acids, alkalies, alcohol, oils, salts, and petroleum products.

(See Page 188 for more Bulletins)

Hetherington & Berner Announces

The Moto-Patcher



—a mobile mixing unit designed for easier, more economical road and street maintenance.

for speedy, low-cost patching

● The Moto-Patcher delivers up to 10 tons per hour of *freshly* mixed material. The aggregate may either be shoveled into the hopper, or fed into the hopper by a small elevator (optional equipment). The mixed material is deposited on a pan of convenient height for easy shoveling, or it can be dropped directly onto the road surface. The 400 gal. tank assures an adequate supply of bitumen for uninterrupted production, making frequent stops unnecessary. The mixer, running through the bitumen tank, provides a drying action for the aggregate. If desirable, bitumen may be circulated when machine is not mixing.

Bulletin MP-51, giving specifications, flow diagram and complete information, will be sent on request.

H&B

HETHERINGTON & BERNER INC.

Engineers—Manufacturers

737 KENTUCKY AVENUE • INDIANAPOLIS 7, INDIANA

Catalogs for You

Write directly to the manufacturers, or use coupon on page 25

(*Continued from page* 187)

Pipe Cutter

388 A circular and price list No. 33 AC on its complete line of pipe cutting tools for waterworks may be obtained by writing to the Ellis & Ford Mfg. Co., Ferndale 20, Mich. The Ellis pipe cutter cuts large sizes of pipe. Model No. 01 cuts pipe from 4 to 8 inches, and Model No. 1, pipe from 4 to 12 inches.

Water-System Filters For Mobile Applications

389 Sparkler filters to purify water are ideal for mobile applications, states the Sparkler Mfg. Co., Mundelein, Ill. Sparkler Model SC diatomite filters are designed to filter large quantities of water quickly and effectively at low cost. The self-cleaning complete units, including filter, pump, slurry feeder, debris catcher, chlorinator, and gasoline engine, can be furnished ready for mounting on any truck or trailer bed.

Official Badges

390 V. H. Blackinton & Co., Inc., Attleboro Falls, Mass., on request will furnish information about its badges for police, fire, town, city, county, and state officials, civil defense, plant protection, and junior police. The badges are decorated with hard enamel that fills the recesses flush with the top of the metal. Sketches of special designs will be submitted by company designers.

Produce Ultra-Pure Water at Low Cost

391 *Ultra Deioniser—New Bulletin 512* reports on single-tank deionizers of mixed-bed, monofio design which gives up to 44% more capacity. According to the Elgin Softener Corp., 134 N. Grove Ave., Elgin, Ill., the equipment produces water of highest known chemical purity, free from all ionizable impurities, including carbon dioxide, and silica. The company states that it is particularly valuable for supplying high-quality water required for high-pressure boilers, such as are used in municipal power and water plants.

Makes Water Filters Work Better

392 Produced by the Anthracite Equipment Corp., Anthracite Institute Bldg., Wilkes-Barre, Pa., Anthrafilt is a filter medium designed to make water filters work better. The concern declares that among the outstanding advantages its product has over sand and quartz media are; doubled length of filter runs, shorter filter wash cycle and increased filter output with better quality effluent. The company states that it is a perfect supporting medium for synthetic resins used frequently in water softening.

Filter-Bed Agitators Make Cleaning Easy

393 The Palmer Filter Equipment Co., 822 E. 8th St., P. O. Box 1655, Erie, Pa., has compiled a booklet, *Palmer Filter Bed Agitators*, which gives general information-specifications and installation data regarding the application of Palmer agitators, or rotary surface wash-in vertical and horizontal pressure filters—round, square, and rectangular open gravity-type filters. The rotary surface wash, or filter bed agitators, consists of self-propelling, water-driven, revolving arms attached to a central bearing. This bearing in turn is suspended from a supply pipe arrangement, in which is inserted the one valve required for operation and control of the unit, or units required per filter.

Municipal Purchasing News

Information for officials interested in equipment and services for the construction, operation, and maintenance of municipal utilities

Branch managers of the Byron Jackson Co.'s Pump Division hold meeting in Los Angeles. Left to right, are: Ronnie Wiseryg, Chicago; Don T. Metz, San Francisco; Jack Adams, Plainview, Texas; Bill Thomas, Houston; Norman Jesse, New York; Carleton Relephord, Los Angeles; Al Vonnegut, Chico, Calif., and Gale Smith, Fresno, Calif.

Byron Jackson Co. Conducts Meeting

The Byron Jackson Co., P. O. Box 2017 Dept. 50, Terminal Annex, Los Angeles 54, Calif., held what was reported as its most successful meeting for the branch managers of its Pump Division during the week of Oct. 29th in Los Angeles, Calif.

E. S. Dulin

The agenda of the daily sessions covered topics as outlined by E. S. Dulin, president of the company, in analyzing general trends and company policies. Problems ranging from priorities and training of salesmen to interesting new engineering developments and legalities in establishing new offices were reviewed in detail.

The Byron Jackson Co. has entered into an escrow agreement with Oliver L. Bardes of Cincinnati, owner of the A. D. Cook Pump Co., to purchase the assets of his organization located at Lawrenceburg, Ind., according to an announcement by Mr. Dulin. These assets will provide the company with 150,000 additional square feet of manufacturing space and modern facilities which can be used for the production of B-J centrifugal pumps and Cook vertical turbine pumps.

Mr. Dulin reports that there has been an increasing demand for Byron Jackson products in the eastern markets which has necesaitated the acquisition of additional manufacturing facilities in the eastern part of the United States. Production at the Lawrenceburg plant will be expanded in the near future, and the present dealer organization of the Cook Co. will be continued under the new ownership.

Machines for Gunning Concrete Pneumatically

The Bondactors are machines that are now in extensive use for the air-placing or gunning pneumatically of many cementitious materials and aggregates, according to the Air Placement Equipment Co., manufacturer, 1009-11 West 24th St., Kansas City, Mo. In addition to sand and cement concrete, some

This machine is employed for air-placing or gunning pneumatically many cementitious materials and aggregates.

of the other aggregates include: Vermiculite and other insulating concretes; high temperature concretes, such as a blend of Haydite and Lumnite cement; many types of castable refractories; blends of fire clay and silica sand or other ganister. This equipment, reports the company, is efficient for both wet and dry sandblasting.

The manufacturer states that the Model No. 1000 Bondactors are supplied in two types: the Model No. 1000-S, which operates with a 105-cfm air compressor, and the Model No. 1000-L, which requires a 210-cfm air compressor for efficient operation. By changing the material hose and the Bondactor gun, either model can be changed to the other. The Model No. 1000-S has a maximum production capacity of 1½ cubic yards of sand and cement aggregate per hour. This compares with a 3-cubic yard maximum possible when the Model No. 1000-L set-up is employed.

Extra-Duty Chain Saw Is Light in Weight

A light-weight, two-man chain saw, which can be operated with ease by one man, and yet does the heaviest of heavy-duty jobs, is reported by Henry Disston & Sons, Inc., 1065 Tacony, Philadelphia 35, Pa. Latest in the Disston line, the saw is known as the DA-211 Intermediate.

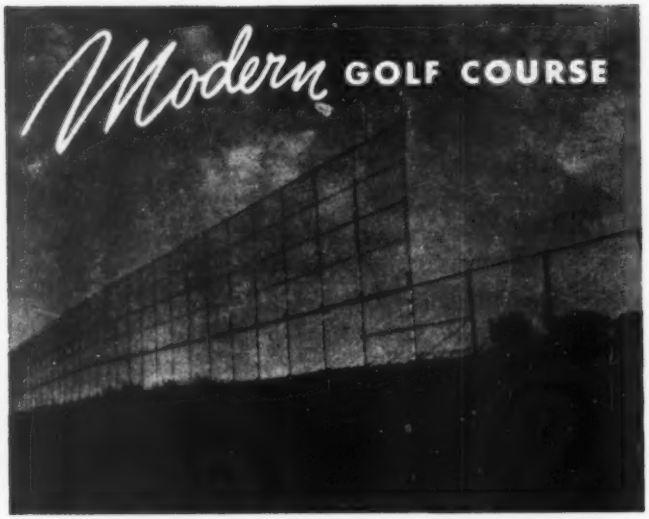
It is powered by a nine-hp Mercury engine, has an automatic clutch, automatic chain oiler, non-clogging air intake, oversized cooling fan, and simplified controls.

To prevent undue vibration and eliminate fatigue during sustained cutting, the even power of the two-cylinder Mercury engine is augmented with "shock mounting." The bicycle-type handles are shock-mounted in rubber.

The manufacturer states that the power head incorporates a number of advanced features: a "full-jeweled" engine with roller and needle bearings throughout, twin exhaust stacks which minimize back pressure and provide maximum muffling, reed valves which eliminate back-firing and the need for frequent timing adjustments, and an oversize straight-fin fan which provides maximum cooling.

The saw is so designed to permit the user to mount a holding claw suited to the timber to be cut. The DA-211 unit, with the standard two-foot rail, lists at $480 with other guide rail lengths slightly higher.

Prior to full-scale production, the Disston DA-211 endured rigorous cutting tests in the Northwest. Oregon woodsman Ray Byers gets the feel of the unit in redwood timber near Eureka, Calif. The saw's flexibility, as either a one- or two-man carry, was demonstrated effectively in rugged terrain where slope cutting was in progress.



. . . protected by CYCLONE FENCE!

AT THIS UP-TO-DATE golf course, sturdy, trespasser-proof Cyclone Fence was installed to protect the greens and equipment from the acts of careless and thoughtless people . . . and to make control of entrance and exit traffic easy and efficient. But that's not all. The screen is high enough to reduce to a minimum the dangers, to passing pedestrians and motorists, of powerfully-driven golf balls.

Your particular fencing problem may be similar to the one illustrated here, or it may involve a far more vital project, such as guarding a water reservoir, a power plant or an airport. Whatever your requirements, we are sure that there is a type of Cyclone Fence just right for your job—especially designed to give you the longest service with a minimum of maintenance. Our engineers will be glad to consult with you, without obligation of course.

And in the meantime write for a free copy of our 32-page catalog. It's packed with information on all types of Cyclone Fence, Gates and other Cyclone Property Protection Equipment.

CYCLONE FENCE DEPT., AMERICAN STEEL & WIRE DIVISION
UNITED STATES STEEL COMPANY
WAUKEGAN, ILLINOIS SALES OFFICES COAST TO COAST
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

NO JOB IS TOO LARGE—NO JOB IS TOO SMALL FOR CYCLONE*

U·S·S CYCLONE FENCE

**Cyclone is the trade-mark name of fence made only by Cyclone. Accept no substitute.*

—CLIP THIS COUPON—SEND IT TO—

Cyclone Fence, Waukegan, Ill., Dept. B-12
Please mail me, without obligation, a copy of "Your Fence."

Name .....
Address .....
City ..... State .....
I am interested in fencing:
☐ Industrial; ☐ School; ☐ Playground; ☐ Residence.
Approximately ..... feet.

UNITED STATES STEEL

N. T. Veatch Is Named Kansas City's Man of the Month

When Tom Veatch, head of Black and Veatch, Kansas City 2, Mo., consulting engineers, found himself named "Man of the Month" in the Kansas City publication, *Swing*, he discovered his picture in an unusually favored spot for an engineer.

Tom Veatch, Kansas City's Man of Month

The photograph was a portion of the magazine's pictorial section. In the center spread, on one side was Ann Miller, Columbia Pictures dancing star; Opposite Miss Miller was an equally photogenic picture of Betty Grable. And on the opposite side of the page was the photograph of Mr. Veatch.

The story of his accomplishments was eight pages long and gave a fine tribute to him both personally and professionally. It called attention, not only to the engineering excellence of the projects that the firm of Black and Veatch has handled, but also to their architectural beauty and their diverse character. The magazine was much impressed by the fact that although he is a long-time Republican, nevertheless he claims a long and warm friendship with President Truman, starting when the President was presiding judge of the Jackson County Court, and the then Judge Truman appointed Mr. Veatch to a bipartisan road commission.

The "Man of the Month" selection is made by men who have received this distinction previously. It is sponsored by WHB, Kansas City broadcasting station.

Stops Seepage In Masonry Walls

Seepage through masonry walls can be corrected in most cases by the use of a copperized, hard cement coating that will act as a water seal, according to Coprox, Inc., Rockefeller Center, New York 20, N. Y., manufacturer of the product. The powder may be applied to the interior wall and thus eliminate the need for expensive excavation and membrane seals.

Coprox is a powder which, with the addition of water, forms a hard, dense surface coating that bars the passage of seepage water. It also provides a pleasing, non-powdering finish which is decorative as well as protective. Coprox expands in the presence of water and seals the minute pores with a hard, tight plug which is non-soluble and non-absorbent. The coating sets quickly and within a few days hardens into a stone-like surface.

A pamphlet supplied by this company describes more in detail how it works and how to apply it.

Huber Co.'s Northeastern District Sales Manager

The Huber Mfg. Co., Marion, Ohio, announces the appointment of Don McPherson as district sales manager in the Northeastern District which takes in all of the New England states, Maryland, New Jersey, New York, Pennsylvania, and Virginia. The company manufac- a complete line of road maintenance equipment, including tandem and 3-wheel rollers, a 42½-hp maintainer, and a heavy-duty grader.

Don McPherson

Mr. McPherson has been with Huber since 1942, and prior to his recent assignment, he was assistant district sales manager in the southern states. For the present, he will maintain offices at the company's home offices in Marion.

Engineering Partnership Is Announced

Richard Hazen, consulting engineer, and Alfred W. Sawyer, former associate of Malcolm Pirnie Engineers, announce the formation of a partnership for the practice of engineering. Their office will be located at 110 E. 42nd St., New York 17, N. Y.

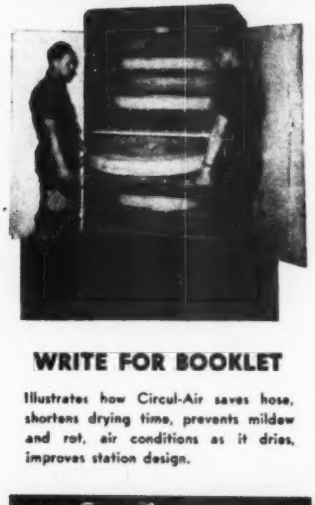
Fields which will be covered by the firm will include investigations, design, supervision of construction and operation, water supply, purification, distribution, sewage works, and industrial waste disposal.

Universal Atlas Cement Holds Election of Officers

Election of five executives to higher office by directors of the Universal Atlas Cement Co., 100 Park Ave., New York 17, N. Y., was reported by Blaine S. Smith, president of this United States Steel Subsidiary.

George H. Reiter, vice-president and general sales manager, was elected to the newly created post of executive vice-president; Fred T. Wiggins, vice-president and assistant general sales manager, to vice-president and general sales manager; Charles B. Baker, assistant to the president and secretary, to vice-president and general attorney; Donald C. Leo, assistant secretary, to secretary, and Edward D. Depew, attorney, to assistant secretary. All will have their offices in New York.

CIRCUL-AIR
FIRE HOSE DRYER



WRITE FOR BOOKLET

Illustrates how Circul-Air saves hose, shortens drying time, prevents mildew and rot, air conditions as it dries, improves station design.

THE CIRCUL-AIR CORPORATION
575 E. Milwaukee Street
DETROIT 2 MICHIGAN

ADJUSTABLE VALVE BOXES

AT THE LEFT is shown our 3-piece screw type valve box, designed for modern-day street traffic.

5¼" Valve Box (3-piece Screw Type) Extension

AAA—17" Stationary length
AA—1'10" to 2'4"
A—2'4" to 3'4"
B—3' to 4'
C—3'6" to 4'6"
CC—4' to 5'
D—3'6" to 5'6"
E—4' to 6'
F—5' to 7'
G—6' to 8'

AT THE RIGHT is our 2-piece extra heavy sliding type valve box, designed to cover the stuffing box of valves up to 10" in size and to slide instead of rotate—a type meeting with favor with water works men throughout the U. S. Can also be furnished in Screw-Type.

(2-piece Sliding Type) Extension:

5560-S 1½'-2'
5562-S 2'-3'
5564-S 3'-4'
5462-S 2½'-4'
5464-S 3'-5'
5466-S 4'-6'
5468-S 5'-7'

2-piece Sliding Type 5¼" Shaft

BELOW, at right, is a 2½"-shaft extension service box.

EXTENSION SERVICE BOXES

2¼" Shaft

3-piece Screw Type 5¼" Shaft

2½-inch Shaft

89-A—1' to 1'8"
90-B—1'6" to 2'2"
91-C—1'9" to 2'9"
92-C—2' to 3'2"
92-D—2' to 3'6"
93-D—3' to 4'
93-E—3' to 4'6"
94-D—3'6" to 4'9"
94-E—3'6" to 5'
95-E—4' to 5'6"
100-E—4'6" to 6'
100-F—4'6" to 6'6"

2½ and 3-inch Shaft

3-inch Shaft Extension:

1½—1'6" to 2'4"
2—2' to 3'3"
3—2'8" to 4'
4—3'10" to 4'10"
5—5'6" to 5'6"
7—4' to 6'

Write for Circular

Besides these boxes we manufacture a great many other patterns and are continually adding new designs to take care of special problems in the water and gas field.

BUFFALO PIPE & FOUNDRY CORPORATION
Box 55, Station B, Buffalo 7, N. Y.

Fire Extinguisher Remains Free from Corrosion

A one-quart fire extinguisher that will remain free from corrosion is reported by The General Detroit Corp., 2272 E. Jefferson Ave., Detroit 7, Mich.

The manufacturer reports that a corrosion arrestor featured in the General Quick Air Fire Guards defeats the problem of corrosion. The patented sure-action corrosion arrestor is a definite part of the pump which purifies the liquid and eliminates corrosion. It is pointed out that with this addition, the equipment is the only one quart vapo-liquid extinguisher in the world having the interior protected by a sure-action corrosion arrestor.

Dependability and ease of operation are features of this new fire extinguisher which has a corrosion arrestor.

Approved by the Underwriters' Laboratories, the extinguisher meets requirements for Board of Railway Commissioners and Inter-State Commerce Commission for use on motor trucks, trains, and buses, and is suitable for on-the-spot protection in factories, farms, and homes for fighting gasoline, oil, and electrical fires.

Hydraulic Pipe Pusher

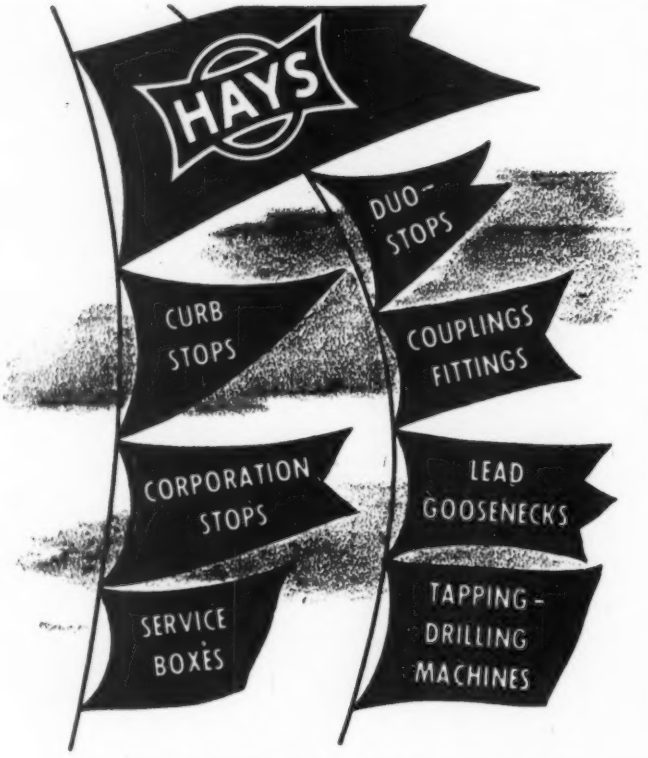
Extensive trenching is eliminated when one employs a Greenlee hydraulic pipe pusher for installing pipe underground, under lawns, pavement, and other obstacles, according to the Greenlee Tool Co., 2030 Columbia Ave., Rockford, Ill. By pumping handles, powerful hydraulic pressure is applied, forcing pipe through the ground. The equipment is used for installing pipe for gas, water supply, sewer and other purposes, conduit for electricity, and telephone cable.

Available are the following models: No. 790 for pushing sizes 4 inches and smaller; No. 795, for pushing sizes larger than 4 inches and which develops up to 75-ton pressure; No. 797, gasoline-driven power pump, which speeds pipe pushing four to five times as fast as one does it by hand.

Outboard Motors For Municipal Needs

For operation on reservoirs and lakes, a new 3-hp outboard motor is offered by Evinrude Motors, Milwaukee 16, Wis. Greater efficiency is attained by a three bladed propeller 6½ inches in diameter with higher gear ratio. Other features are Fisherman drive for efficient operation in shoal or weedy waters, one-lever speed control, and underwater silencing.

The Evinrude line for higher powered boats comprises a 7½-hp motor weighing only 47 pounds also for shallow-water operation, a popular rugged 14-hp, and a 25-hp for 30-mph and heavy-duty requirements.



It Pays to Buy HAYS . . . high quality water service bronze, 85-5-5-5 mix . . . hydrostatically tested at 200 lbs. or more . . . plugs individually ground in for perfect fit . . . Hays Corporation Stops can be inserted with your tapping machine.

HAYS WATER WORKS PRODUCTS
HAYS MANUFACTURING CO. ERIE, PA.

Heil Company Marks 50th Anniversary

A page from the 50th anniversary booklet of The Heil Co.

The Heil Co., Dept. 43121, 3043 West Montana St., Milwaukee 1, Wis., is observing its 50th anniversary this year, and has issued a booklet illustrating its products including truck bodies, hoists and earth moving equipment and giving the company history, policy, and facilities.

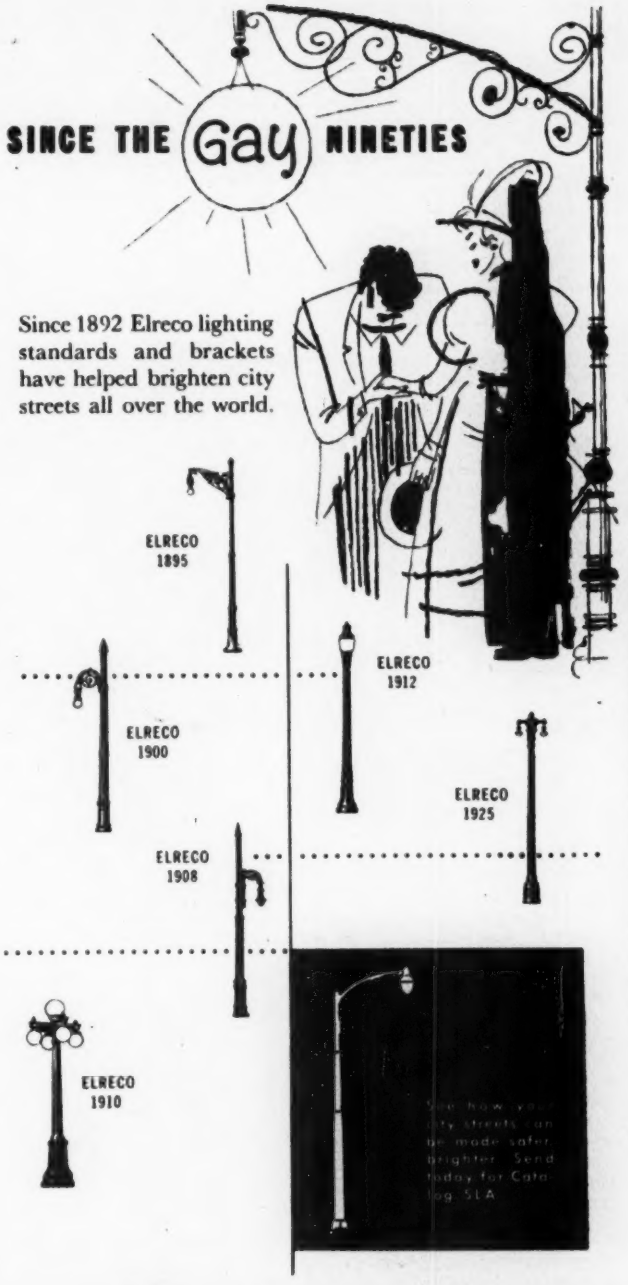
The concern was founded by Julius P. Heil in Milwaukee in 1901, when Mr. Heil rented a small frame building where he manufactured steel storage tanks and wagon tanks. He pioneered in the replacement of conventional riveting with welded construction. Today the company has three plants, two in Milwaukee and one at Hillside, N. J. Heil products flow to 50 different types of business and industry through more than 600 distributors in every state in the nation and in 50 foreign countries.

Joseph F. Heil, son of the founder, has been active in every phase of the company's operation for 20 years, becoming its president in 1946. A third generation of the family, Joseph F. Heil, Jr., also is associated with the firm.

Seals to Protect Poultry

An increasing number of cities and states are requiring inspection seals on processed poultry. The cities include Columbus, Ohio; Long Beach, Los Angeles, Pasadena, the County of San Bernardino, Calif.; Salt Lake City, Utah, and the state health departments of Colorado, New Hampshire, and Pennsylvania.

The lithographical seals are the Griplock wing type made by E. J. Brooks Co., 164 N. 13 St., Newark 7, N. J. The company also makes seals for parking meters, coin bags, gas, electric and water meters, and voting machines.


SINCE THE Gay NINETIES
Since 1892 Elreco lighting standards and brackets have helped brighten city streets all over the world.
ELRECO 1895
ELRECO 1900
ELRECO 1908
ELRECO 1910
ELRECO 1912
ELRECO 1925
THE ELRECO CORPORATION
2900 CORMANY AVE. CINCINNATI 25, OHIO

Caterpillar Tractor Expands; New Factory in York, Pa.

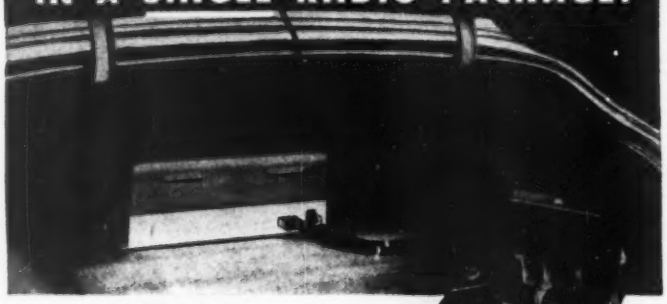
The Caterpillar Tractor Co., Peoria 8, Ill., announces an expansion program that will include a new factory in York, Pa., extensive additions to the Joliet, Ill., plant, and some improvements in the Peoria, Ill., plant. In announcing the program, L. B. Neumiller, president, said it has been made necessary by continuing expansion in the demand for Caterpillar machines and parts.

The York plant will be built on a site of approximately 180 acres and cover about 350,000 square feet of floor area. It will produce track and track-roller parts, and its entire output will be distributed to dealers in eastern United States and Canada, and to export dealers served through East Coast ports.

Major additions to the Joliet plant will be a 230,000 square foot extension to the present manufacturing building, a separate parts building, and an addition to the heating plant.

A new die and fixture building is being established at Peoria to permit future improvement in the layout of equipment in certain other buildings, and to further improve the efficiency of several manufacturing operations.

HERE'S TOP PERFORMANCE IN A SINGLE RADIO PACKAGE!



KAAR RADIOPAK

The four outstanding features for which Kaar equipment has long been noted have now been combined into a single mobile radio-telephone package that is far ahead in performance . . . yet competitive in price!

The Kaar RADIOPAK features ruggedness, simplicity of design, lowest battery drain, exceptional voice quality *plus* greater than ever stability and sensitivity, engineered selectivity that exceeds the standards set by FCC regulation — all in a single unit transmitter-receiver that is completely integrated for simplicity of installation, maintenance, and operation.

RADIOPAK is ideal for police, taxi, fire equipment, and trucking installations and is particularly suited for three-wheeled motorcycle use. ***Don't be content with an ordinary radiotelephone system—specify RADIOPAK!***

Kaar RADIOPAK "In a nutshell":

FREQUENCY RANGE: 152-174 mc

POWER OUTPUT: 10-12 watts

BATTERY DRAIN: Standby 6½ amps, Transmitting, 15 amps

DIMENSIONS & WEIGHT: 6¾" high, 8" wide, 18⅛" long, 24 lbs.

STABILITY: Better than .005% for a 50° C temperature change with standard Type E crystals

SPURIOUS EMISSION: Down at least 70 db

SPURIOUS RESPONSE: Down over 85 db

SELECTIVITY: 100 db down at 60 kc off resonance

SENSITIVITY: 20 db quieting on less than ½ microvolt of signal

AUDIO RESPONSE: ±3 db from 180 to 3000 cycles

KAAR ENGINEERING CO. • Palo Alto, California

E. H. Holt **J. D. Turner**

Changes in Barber-Greene Sales Organization

Major changes in the sales organization of the Barber-Greene Co., 633 West Park Ave., Aurora, Ill., have been reported by W. B. Greene, president and co-founder of the company, manufacturer of asphalt plants and finishers, belt conveyors, bucket loaders, snow loaders, car unloaders, and ditchers.

W. B. Holder, formerly general sales manager, will head a new division of the firm. E. H. Holt will become general sales manager, and J. D. Turner, director of publicity and promotion.

The company marks its 35th anniversary this year, having introduced its standardized belt conveyors in 1916, and the original self-feeding bucket loader in 1917. Other B-G machines include: special coal-handling machines, snow loaders, and the vertical boom ditcher, as well as asphalt plants and finishers, railroad snow loaders and melters, car unloaders for aggregate handling, and the Redi-Fab series of belt conveyors.

Parkit-Lockit Co. In Newtown, Ohio

The Parkit-Lockit Co., of Cincinnati 9, Ohio, manufacturer of coin collectors (clockless parking meters), announces that the new location of its office and factory will be at 77 Church St., Newtown, Ohio.

Rust Preventive Paint Dries in Ten Minutes

An improved formula of its Certified Rust Inhibitor No. 425 is announced by United Laboratories, Inc., 16801 Euclid Ave., Cleveland 12, Ohio. The concern reports that this new rust-preventive paint dries in 10 minutes under normal drying conditions, and that one coat provides excellent coverage of the old metal surface. This latter feature will reduce painting costs up to 50%.

The new formula, known as Rust Inhibitor No. FD-425, will withstand temperatures from minus 100° F. to plus 250° F. and is resistant to salt air and fumes. It may be applied over damp surfaces, interior or exterior, galvanized metal and new or rusted metal surfaces of all kinds. The one-coat, fast-drying process leaves an attractive, semi-gloss finish, and is available in several colors plus aluminum and clear.

Plans Are Completed For Major Bridge In Puerto Rico

Plans prepared by D. B. Steinman, consulting engineer, 117 Liberty St., New York, N. Y., for the proposed $2,000,000 Martin Pena Channel Bridge at San Juan, Puerto Rico, have been approved by the Insular Government of Puerto Rico and by the United States Bureau of Public Roads at Washington.

Mr. Steinman reports that the bridge will be a first-class modern structure, replacing the existing narrow and inadequate old bascule span and timber trestle at the same site. The new structure, linked with new arterial highways and fitted into the street patterns and traffic interchanges of the planned San Juan Port Development, will provide a major artery of traffic connecting San Juan and Santurce with Bayamon and other cities and towns to the south.

The bridge will be a four-lane structure, with a width of 69 feet, providing two 26-foot roadways, a 5-foot median strip, and two exterior 6-foot sidewalks. The concrete deck is supported on multiple girders spaced about 10 feet on centers and braced with substantial cross-frames. The bridge over the main channel is designed as a three-span continuous structure of deck plate-girders with a central span of 120 feet and two side spans of 72 feet each. This central structure is flanked by simple spans and groups of continuous units consisting of 36-inch wide-flange girders. The span lengths, varying from 57 to 85 feet, are provided for two overpasses at streets and for a future interchange at the south end. The total length of structure between abutments is 1,700 feet.

Special attention has been given to the architectural character of the design as a prominent civic structure, also to the city-planning features as an important arterial development.

The estimated physical cost of construction of the bridge, exclusive of approaches, is $1,800,000. The project is financed jointly with combined funds from the Insular and Federal Governments.

The bridge was designed by Mr. Steinman, who will also have supervision of the construction. The work is executed under the direction of the Government of Puerto Rico, represented by Jorge J. Jimenez, Commissioner of the Interior, and Angel Silva, Director of Highways.

New Advertising Manager At Gardner-Denver Company

Carson L. Ruyle has been appointed advertising manager of the Gardner-Denver Co., Quincy, Ill., assuming the position formerly occupied by Navy Lieutenant Damon P. Tunnicliff, who has been called to active service.

Mr. Ruyle joined the firm in 1930, serving in the engineering and accounting departments. Since 1941, he has been a member of the sales division at the Quincy office.

From Break to Service *in 11 minutes...*

THE KENNEDY SAFETOP is the only hydrant with the threaded breaking ring that gives positive connection and rigid alignment of the two standpipe sections. Extensive tests and actual service reports show that the Kennedy *Safetop* can stand as tough a blow as the conventional hydrant without damage. But under a smashing impact, it always breaks cleanly at the breaking ring, without damage to working parts.

SHEARED OFF by a heavy road-scraper at 1:26, the Kennedy *Safetop* breaks evenly at the ground level.

Photos taken at N. Y. State Section meeting, A.W.W.A., April 1949.

WITH ONLY an inexpensive *Safetop* Repair Kit and a few common tools, one man can permanently repair the Kennedy *Safetop*.

NO NEED FOR DIGGING because breakage is all above ground . . . no flooding because compression-type valve closes with water pressure.

IN JUST 11 MINUTES the Kennedy *Safetop* is back in service . . . working as smoothly and efficiently as if nothing had happened.

THE COMPLETE KENNEDY LINE includes a wide range of A.W.W.A. valves and fire hydrants. When you standardize your community on KENNEDY, you are assured of the same high quality and dependability that have characterized all products of KENNEDY for 74 years.

WRITE FOR SAFETOP BULLETIN 105

Est. 1877

THE **KENNEDY**

VALVE MFG. CO. • ELMIRA, N.Y.

VALVES • PIPE FITTINGS • FIRE HYDRANTS

More LIGHTING PROTECTION!
Better Street Lighting!
PYLON-LITES
LUMINAIRES
Finishing Rings
for your Vulnerable Areas
Protect water works installations, lighting plants, public buildings, bridges and other municipal property with adequate illumination.
The Greatest STREET LIGHTS EVER DEVELOPED. WHITE-WAY PYLON-LITES with single, double or triple luminaires.
Single and Double Arm One-Piece Standards
HINGED STREET LIGHTING POLE
Eliminate Risky Climbing or Costly Servicing Equipment
WHAT DID You Resolve TO DO IN '52 to improve your Community through PLANNED LIGHTING?
Revere
has the EQUIPMENT for ALL your NEEDS!
More Recreation • Safety • Airports
Open and Enclosed Floods for skating rinks and recreation fields.
A Safety Island lighter that motorists can see.
Give your Airport the friendly, welcoming look!
REVERE ELECTRIC MFG. CO.
6012 BROADWAY - CHICAGO 40, ILLINOIS
INDOOR AND OUTDOOR LIGHTING EQUIPMENT TO SERVE EVERY NEED

Plastic Electrical Tape Protects Against Pipe Corrosion

This plastic electrical tape has a black, vinyl plastic backing that is 20 mils thick.

A new heavy-duty plastic electrical tape designed for applications where more-than-average mechanical strength is needed, has been announced by the Minnesota Mining and Mfg. Co., 900 Fauquier St., St. Paul 6, Minn. It is available in 36-yard rolls, ranging in widths from ¼-inch to 16 inches.

Designated "Scotch brand electrical tape No. 21," it is recommended for anti-corrosion protection for pipes, cables, and equipment laid underground where resistance to cuts and abrasion by rocks during back-fill is important. It is also recommended for protecting and insulating cable and high-tension leads subject to wear, abrasion, and rough handling, and for bus bars carrying high voltage.

The tape has a black, vinyl plastic backing that is 20 mils thick—more than twice the thickness of previous tapes of its type, reports the manufacturer. It has a dielectric strength of 22,500 volts, an insulation resistance of 200,000 megohms, and an electrolytic corrosion factor of 1.0

Appointed Officers of Marvel-Schebler Products

Robert J. Minshall has been appointed president and general manager, and G. V. Patrick as vice-president and assistant general manager of the Marvel-Schebler Products Division of the Borg-Warner Corp., 310 S. Michigan Ave., Chicago 4, Ill.

Mr. Minshall also is president of the Pesco Products Division of Borg-Warner at Bedford, Ohio, and the Wooster Division at Wooster, Ohio. Mr. Patrick joined Borg-Warner in 1948 as eastern sales manager.

The reorganization of the Marvel-Schebler executive staff resulted from the retirement of S. W. Gray, president, who is well known in the automotive and farm-equipment industries.

In 1923 Mr. Gray joined the Wheeler-Schebler Carburetor Co., Indianapolis, Ind., as project engineer. When the Wheeler-Schebler Co. was merged with Marvel Carburetor Co., Flint, Mich., Mr. Gray was assistant chief engineer.

Allan M. Hirsh, Founder Of Lock Joint Pipe, Dies

Allan M. Hirsh of Montclair, N. J., founder and president of the Lock Joint Pipe Co., East Orange, N. J., died Nov. 10 at St. Luke's Hospital. He was 73 years old.

A native of Richmond, Va., he attended Yale University, and while a sophomore, wrote the music and words of the school's rousing song, "Boola-Boola."

After leaving college, he decided to start in business for himself. Cement cylinders which he had manufactured for dock pilings were converted into sewer pipe after his idea of cement dock pilings had failed. In 1905, Mr. Hirsh founded the Lock Joint Pipe Co., of which he was president until last year, when he became chairman of the board. The special design used by the company was based on an invention by Coleman Meriwether.

Mr. Hirsh played an important role in the development of the Lock Joint prestressed reinforced concrete pipe used widely in large water mains and transmission lines.

He is survived by his wife, the former Ellen Hughson Reid; four sons, Allan M. Jr., Philip R., John Hughson, and Malcolm McCallum Hirsh, and a sister, Mrs. Estelle A. Deutsch.

Ryerson Buys Seattle Steel, Inland Empire Companies

Joseph T. Ryerson & Son, Inc., Chicago 80, Ill., steel distributor, has acquired the stocks and warehouse facilities formerly owned by the Seattle Steel Co., Seattle, Wash., and the Inland Empire Steel Co. of Seattle and Spokane, Wash.

C. L. Hardy

The Seattle Steel Co. carried a large tonnage of carbon, alloy and stainless steel in bars, structurals, plates, sheets and tubes, and brass, bronze, copper, aluminum, and other products. The Inland Empire Steel Co. was active in the reinforcing bar and accessory business in Seattle, serving the construction industry. It also operated a warehousing business in Spokane, serving this market with carbon, alloy and stainless steel, and aluminum, copper, and brass.

Charles L. Hardy, president of Ryerson, said this acquisition which brings the group of company warehouse plants to 15, extends Ryerson steel service to the Great Northwest.

Clyde Summerville, principal stockholder, and president of both new subsidiaries for 21 years, will continue with the new owner, as will William Case, Seattle sales manager; Roy M. Bialkowski, manager at Spokane, and the entire organizations.

How D TOURNAPULL Can Stretch Tax Dollars

Stretching tax dollars is an everyday experience for 28 m.p.h. D Tournapull municipal handyman. Proven on all types of construction and maintenance, versatile rubber-tired "D" has built an impressive production record working alone or in fleets across the country. Check these reasons why D Tournapull can make your public works appropriation go farther:

1. Modern rubber-tired speeds— you roll on 18.00 x 25 tires at speeds up to 28 m.p.h. instead of crawling on tracks. Unit can travel under its own power through traffic to routine or emergency tasks miles away in as little as 7 minutes!

2. All-weather performer— low-pressure tires, power-proportioning differential and positive power steer take unit through sand, snow, mud . . . speed work cycles, cut downtime for inclement weather, slowdown for slippery going.

3. Works alone or in fleet— 7-yd. "D" can self-load on one-man, scattered maintenance assignments or two can work in pairs to efficiently push-load each other. This flexibility makes small-yardage job planning easier . . . gives you more effective use of manpower and equipment.

4. Saves on job-to-job travel— operator gets on and drives directly to job. This saves time, and cost of lowboy loading, blocking, trucking, unloading and associated waiting time. Tires do not damage road surface . . . can cross curbs, tracks, etc.

5. Faster, easier to operate— push-button electric controls make "D" easier to handle, eliminate a lot of operator fatigue, contribute to better operator cooperation . . . encourage higher day-by-day production.

Fast-moving D Tournapull can keep producing for you all year long — anywhere in your community. Your LeTourneau Distributor can show you job proof of savings on work like yours. Get in touch with him NOW!

Tournapull—Trademark Reg. U. S. Pat. Off.

For complete facts, write:

R. G. LeTOURNEAU, Inc., Peoria, Ill.

Please send complete information on 122 h.p. D Roadster and 6 interchangeable attachments.

Name_____

Title_____

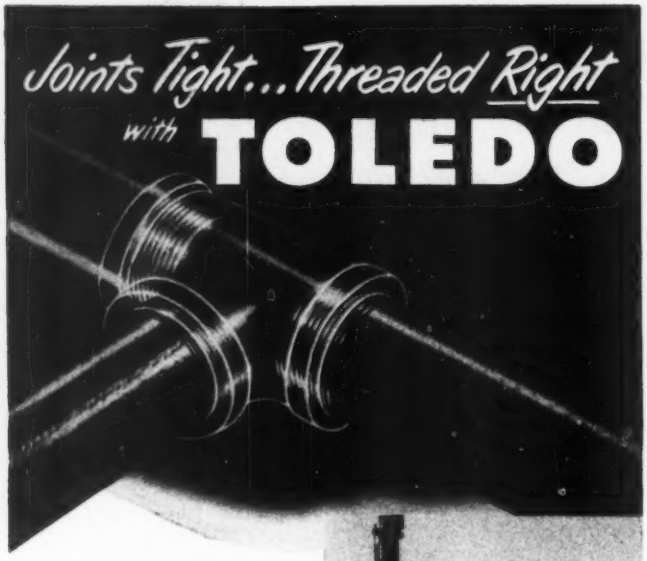
Department_____

City, State_____

LET

LETOURNEAU TOURNAPULLS

MORE WORK PER HOUR WITH RUBBER-TIRED POWER



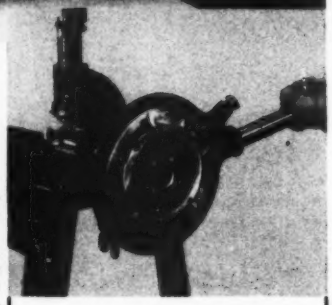
TOOLS DESIGNED TO
SPEED PRODUCTION
... CUT COSTS!

Any way you look at it—you'll do better with TOLEDO Pipe Tools and Power Pipe Machines on the job!

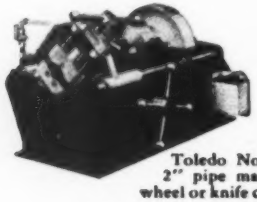
Better workmanship . . . good mechanics for fifty years have found they can always depend on TOLEDO to produce clean-cut threads for tight, leak-proof joints.

Faster production . . . whether it's hand tools or power pipe machines, Toledo gives you top-speed threading, cutting and reaming . . . ease of operation . . . accurate, efficient performance.

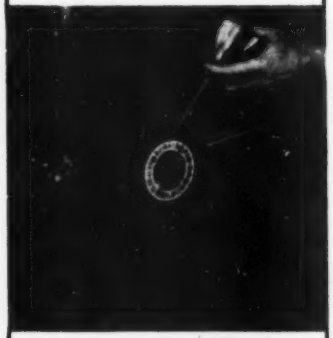
Lower costs . . . it all adds up to ***big savings for you*** in job-time and labor with Toledo dependability! Write for catalog on complete line. The Toledo Pipe Threading Machine Co., Toledo, Ohio. New York Office: 165 Broadway, Room 1310.



Toledo SIMPACT — self-contained, adjustable threader, 1" to 2" pipe.



Toledo No. 999 2" pipe machine, wheel or knife cut-off.



Toledo Small Ratchet Threaders made in three models, ⅛" to 2" pipe.

RELY ON THE LEADER

TOLEDO

PIPE TOOLS . . . POWER PIPE MACHINES . . . POWER DRIVES

Barton A. Holl Appointed to Ohio State Water Control Board

Barton A. Holl, president of The Logan Clay Products Co., Logan, Ohio, has been named to represent business on the Water Control Board for the State of Ohio, created by recent passage of the Deddens Water Pollution Control Bill.

B. A. Holl

The new five-man board, established within the State Department of Health, is composed of the directors of Health, Commerce, and Natural Resources, with two appointed members representing Business and Municipalities. This new authority has the power to conduct studies and develop programs of pollution control and abatement; full jurisdiction over permits for discharge of waste into state waters, plus means for enforcing its orders.

Within the provisions of the Deddens Act, both municipalities and industry must conform to a strong state policy of anti-stream pollution.

Based on his continual studies of the situation, Mr. Holl said that "cities and factories place an impossible strain on the facilities we have for controlling water pollution, and that in the present state of emergency, such conditions are a dangerous threat to personal health and industrial production." The final solution of pollution problems, he declares, depends on public support of efforts aimed at control.

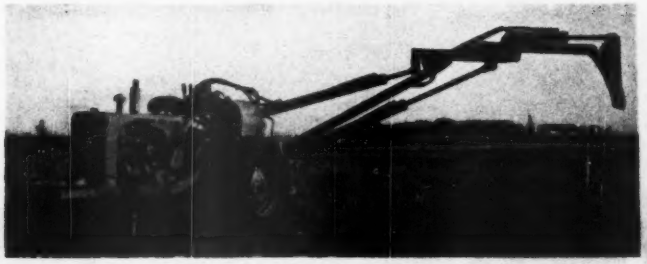
25 or More Catch-Basins Cleaned Daily with One Orange Peel Bucket

For cleaning catch-basins, we use an orange peel bucket made by the Hayward Co., 50 Church St., New York, N. Y., and find it very satisfactory. Three men are employed; one to operate the bucket, one to guide the bucket into the catch-basin, and a truck driver. Most of our basins are located at intersections of streets where the bucket enters the basin through a circular hole about two feet in diameter.

It is very difficult to arrange a schedule for cleaning basins as our city is located on many hillsides and the outlying sections still have many miles of unpaved streets. With heavy rains washing sand and gravel down from the dirt streets to the basins, it requires a continuous return to keep basins clear in this area. On this kind of basin, we average 25 a day. On semi-and improved streets, we do better.

John Washo, Director
Department of Public Works
Scranton, Pa.

Diesel Tractor-Mounted Digger Has Hydraulic-Actuated Rake Attachment



The reach of this digger is 16 feet.

The Badger Machine Co., Winona, Minn., announces the production of its new Hopto digger, mounted on a Sheppard SD-3 diesel tractor.

Completely hydraulic, its total weight is 6,700 pounds, swing, 180°, reach 16 feet, height, boom extended, 19 feet, and digging depth, 9 feet. Its operating pressure is 1,000 psi and lifting capacity, 2,000 pounds, having larger capacities with stabilizers. Digger can be fitted with hydraulic-actuated rake attachment.

Gardner Roll Compacts Soil-Cement Treated Base Of California State Highway Project

T. F. Baun, president of the Baun Construction Co., Fresno, Calif., reports that a single Buffalo-Springfield tandem roller, equipped with the new Buffalo-Springfield Gardner roll, was used to compact the soil-cement-treated base, the base-course plant-mix surface, and the finish course on the recently completed three-mile California State Highway Project on Manning Road in Fresno County.

According to Mr. Baun, the Gardner roll, with its 72 compression "islands" produced higher compaction of the soil-cement base than possible to achieve with conventional methods. In addition, this machine also produced better compaction of the plant-mixed base course and the surface course than could be obtained with a conventional smooth-faced roller.

The Gardner roll, offered exclusively by the Buffalo-Springfield Roller Co., Springfield, Ohio, consists of two sections mounted on roller bearings and free to rotate independently on the guide-roll axle. Heavy, metal islands are mounted on sturdy spokes and form the compacting surface of the roll. The manufacturer states that this roll produces greater and more uniform densities in less rolling time in the compaction of loose materials in fills, stabilized bases, and cold and hot-mix wearing surfaces.

The Buffalo-Springfield Gardner roll is interchangeable with the smooth-faced guide roll on Buffalo-Springfield KT-19, KT-20, KT-24B, and KT-25B tandem rollers. It can also be furnished for use on several Buffalo-Springfield models, not currently manufactured.

The roll on this tandem roller is interchangeable.

COPROX

the NEW copperized hard cement coating

LIFE told about it in the July 16th issue

PROTECTS MASONRY AGAINST WATER SEEPAGE, DAMPNESS AND EROSION

HAS THESE ADVANTAGES OVER OTHER PROTECTIVE MASONRY COATINGS

1. BOND OF MONOLITHIC NATURE.
2. INCREASED DENSITY because of greatly reduced pore structure and size.
3. RESISTANCE TO HYDROSTATIC PRESSURE* but permits release of vapor pressure through "breathing."
4. TOUGH, HARD, WASHABLE SURFACE. No dusting.
5. CONTRACTION AND EXPANSION MINIMIZED with little or no cracking or checking.
6. FAST COLORS . . . no fading.

*Laboratory tests show that two coats of COPROX on one side of a 1" thick panel of concrete prevented the passage of any moisture while a water pressure equal to a 60' head (26PSI) was exerted against it. A similar but uncoated control panel allowed passage of 220 gallons of water per hour.

MUNICIPAL—STATE—FEDERAL ENGINEERS WHO HAVE TESTED COPROX ARE NOW SPECIFYING IT

GET MORE INFORMATION ABOUT COPROX TODAY

AC-1

COPROX, INC.
1270 Avenue of Americas, New York 20, N. Y.

Tell me more COPROX facts for engineers.

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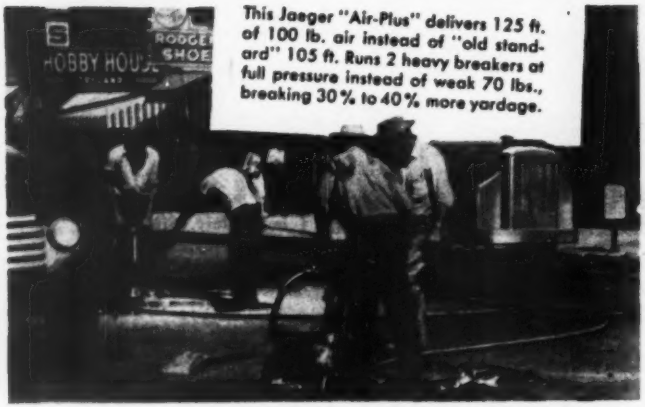
CITY.....ZONE.....STATE.....

You Can Do 4 Days' Work in 3 with "New Standard" Jaeger Compressors


This Jaeger "Air-Plus" delivers 125 ft. of 100 lb. air instead of "old standard" 105 ft. Runs 2 heavy breakers at full pressure instead of weak 70 lbs., breaking 30% to 40% more yardage.

75 ft.	30% to 40% increases in production are yours with any "new standard"
125 ft.	Jaeger from Model 75 that holds full pressure in a heavy pavement breaker
185 ft.	up to Model 600 that runs 2 heavy wagon drills at full pressure with air to
250 ft.	spare for hand-held drills. Jaeger Compressors deliver this 15% to 25%
365 ft.	extra air at lowest cost per cubic foot of air of any compressor.
600 ft.	

See your Jaeger distributor or write for Catalog JC-1.

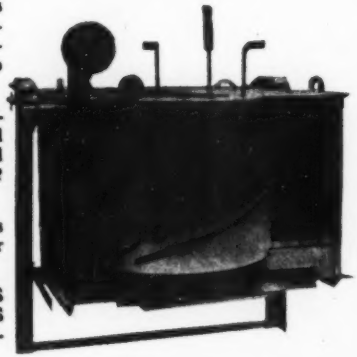
THE JAEGER MACHINE COMPANY 505 Dublin Avenue Columbus 15, Ohio

PUMPS • MIXERS • HOISTS • TRUCK MIXERS • PAVING SPREADERS and FINISHERS

5 REASONS *Why*

The "*Scotchman*" Salt Spreader is BEST for Positive ICE and SNOW CONTROL

1. "Scotchman" applies salt UNIFORMLY—even "bird-shot" melting pattern SAVES up to 50% in salt alone.
2. "Scotchman" is SELF-LEVELING — spread bulk salt from elevated dump truck *without shoveling.*
3. "Scotchman" is ADJUSTABLE for height.
4. "Scotchman" HAS MORE STAINLESS STEEL in its construction.
5. "Scotchman" ENGINE and ENGINE CONTROLS are completely protected and OPERATE IN FILTERED AIR.



See a Demonstration—JUDGE for YOURSELF

TARRANT MFG. CO., East Ave., Saratoga Springs, N. Y.

Mi-Co Meters Buys Alfco Parking Meter

The American - LaFrance - Foamite Corp., Elmira, N. Y., has announced the sale of its Alfco twin automatic parking meter to the Mi-Co Meters Division of the Michaels Art Bronze Co., Inc., Covington, Ky. Acquisition of this unit gives Mi-Co Meters two types of parking machines — the manually operated Mi-Co meter, and the automatically operated Alfco Twin, now called the Mi-Co Twin.

Mi-Co Twin is the new name of this automatic parking meter, recently acquired by the Mi-Co Meters Division from the American-LaFrance-Foamite Corp.

The Alfco Twin automatic meter, originally developed by Alfco engineers, manufactured at Elmira, and sold through the subsidiary company, International Meters, Inc., was introduced four years ago to the motoring public. It serves in 100 cities and towns. According to the manufacturer, it daily provides ease of parking and lower maintenance cost.

The twin parking meter reduces maintenance and operation costs since only half as many need to be installed and the patrolman needs to collect coins from only half as many meters. One meter will serve two parking stalls.

McGraw Electric Buys Insulator Corporation

Max McGraw, president of the McGraw Electric Co., announces the acquisition from W. L. Stinson of the Jeffrey-DeWitt Insulator Corp., Kenova, W. Va. The Line Material Co., Milwaukee 1, Wis., a division of McGraw Electric, and purchaser of electrical porcelain, will operate the new facility which will presently remain under the management of W. L. Stinson, president of the Jeffrey-DeWitt Co.

W. D. Kyle, Jr., president of Line Material, reports that Jeffrey-DeWitt has a considerable backlog which will be produced in addition to providing L-M's ten plants with substantial quantities of electrical porcelain for use in the transmission and distribution equipment which it manufactures.

Mr. Kyle also announces the appointment of W. V. Swan as manager of porcelain sales. Mr. Swan's previous positions have been as a field engineer and superintendent of overhead lines for the Nantahala Power and Light Co.,

Management Officials of Dresser Industries Discuss Executive Training Program

Chief management heads of the Dresser operating companies and executive management officials of Dresser Industries, Inc., Dallas, Texas, the parent organization, held a conclave recently at the Blackstone Hotel in Chicago, where they discussed an executive training program.

Photographed above (standing, left to right) are: Willard Johnson, president, Magnet Cove Barium Corp., Houston, Texas; Robert H. Owens, president, Roots-Connersville Blower Corp., Connersville, Ind.; J. H. Rosecky, general manager, Torrance Plant, Ideco Division, Dresser Equipment Co., Torrance, Calif.; C. Paul Clark, president, Clark Bros. Co., Olean, N. Y.; Eric Flaschar, president, Stacy Bros., Gas Construction Co., Cincinnati, Ohio; Otto Hammer, president, Security Engrg. Co., Inc., Whittier, Calif.; W. O. Cook, general manager, Beaumont Plant, Ideco Div., Dresser Equipment Co., Beaumont, Texas; L. T. Wold, vice-president, Kobe Div., of Dresser Equipment Co., Huntington Park, Calif.; C. E. Ponkey, vice-president, Ideco Div., Dresser Equipment Co., and general manager, Columbus Plant, Columbus, Ohio.

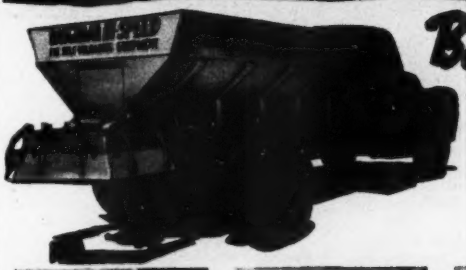
Seated (left to right) are: T. L. Moody, director of industrial relations, Dresser Industries, Inc., Dallas, Texas; R. P. Brown, personnel and organization planning director, Dresser Industries, Dallas; A. R. Weis, president, Pacific Pumps, Inc., Huntington Park, Calif.; H. P. Boncher, general manager, Dresser Mfg. Div., Bradford, Pa., and all of Dresser industries, R. E. Reimer, vice-president, secretary, and treasurer, H. N. Mallon, president, and J. B. O'Connor, executive vice-president.

Correct Signal Timing Quickly Figured

The Eagle Signal Corp., Moline, Ill., in conjunction with the Commonwealth of Massachusetts Department of Public Works, sponsored a New England Seminar for discussion of traffic control and traffic signal appliance Nov. 13 and 14 at the Massachusetts Institute of Technology, Cambridge, Mass.

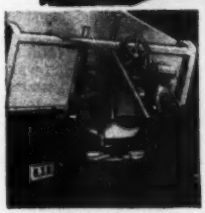
Employees of the company who presented engineering papers included: E. R. Malthouse, F. A. Pearson, J. H. Keim, and Garland Fieser. Other speakers were Holden LeRoy, Senior Associate Traffic Engineer, Detroit, Mich.; , and Bernard B. Twombly, Radio and Traffic Signal Engineer, Commonwealth of Massachusetts, Department of Public Works. Mr. Fieser's paper, "A Quick Solution to Progression Problems", offered a mathematical method of solving progression with unequal distances between intersections. The solution results in equal velocities and equal band widths in both directions. The band width is the widest possible for the particular intersection spacing. Mr. Fieser said that after one is acquainted with the procedure, it is possible to solve a problem involving five or six intersections in less than 30 minutes.

ICE CONTROL *requires specialized equipment*



Baughman *builds the ONLY* **COMPLETE LINE!**

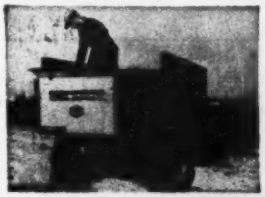
Model ASK-3-SC spreader body sprays cinders, sand, chips, salt, chat, chloride, gravel, etc. . . . from 8 to 40 ft. Also sows seeds, fertilizers and lime in parks and along highways. Write for Bulletin A-349.



Model MD-1 attaches to endgate of dump trucks. Self-powered, it's an effective low-cost spreader of cinders, salt sand, chloride, chips and chat. Bulletin A-357 describes it.

Model SC-51 pull type spreader distributes in a full circle and under wheels of truck. Traction powered. Spreads sand, salt, cinders, chloride, etc. forward or backward. Low price. Described in Bulletin A-358.

Model 51-SB "Streamliner" sidewalk spreader . . . perfect around public buildings, rail & bus stations, airports, parks, walks, etc. Spreads sand, salt and calcium chloride. Ask for Bulletin A-352.



Model 51-SM "Salt Miser" s-c-a-t-t-e-r-s salt or chloride without crushing or powdering. Perfect control from 8 to 24 ft.; spreads material accurately and economically. Bulletin A-350 has complete details.

Model 51 Cinder Cracker for dump bodies spreads cinders, sand and up to ¼" rock. One-man operation — cab-controlled for spot spreading. Cracks any cinders except the hardest cinders. Hydraulic, motor-driven and chain-driven models. Complete information is given in Bulletin A-354.

Write for Information on Our Complete Line

BAUGHMAN **BAUGHMAN MANUFACTURING CO., Inc.**
611 Shipman Road, Jerseyville, Illinois
There is a Baughman Distributor Near You

Infilco's New Research and Executive Building at Tucson, Ariz.

Here is the new research and executive headquarters building of Infilco Incorporated at Tucson, Ariz. P. N. Engel, president, announced that the $600,000 building, designed by Paul R. Williams, opened in October. It is set on a 7½-acre plot, and includes modern facilities for engineering, research, and development divisions, as well as the home sales and executive offices.

Snow and Ice Control By Rock Salt

Rock Salt for Ice and Snow Control and Soil-Stabilized Roads is discussed in a booklet which has been published by the Cayuga Rock Salt Co., Inc., Myers, N. Y. The publication presents the facts about the advantages of using salt for ice and snow control, and provides instructions for building salt-soil stabilized roads.

An article by V. L. Ostrander, Superintendent of Operation and Maintenance, New York State Department of Public Works, discusses *Snow and Ice Control on the New York State Highways*. It points out that snow removal and ice control has quickly grown to major importance among the necessities for highway maintenance. Mr. Ostrander comments on the various methods employed for this type of work, and traces the development and improvements made in the systems and materials used. He also discusses the two methods which are in general use today—one employing the CC size of commercial grade of salt and which is effective on light-traffic country roads where the cross-section of the pavement is steeply crowned and the pavements comparatively narrow, and the other method of using straight salt by spreading it lightly and uniformly over the full width of the pavement or at least to the width of two full safe traffic lanes. He says that both the treated abrasive method and the straight salt method should be carefully planned.

Another article by F. Ray Williams, Superintendent of Highways, Saratoga County, N. Y., is entitled *De-Icing Wintertime Pavements with Salt Cuts Maintenance Costs*, which points to a saving of about $4.27 per mile when using rock salt instead of sodium-chloride-treated sand to de-ice highway pavements. The story also reports on the kind of equipment which is employed for spreading rock salt on state highways in Saratoga County.

Also listed in the booklet are several other articles by municipal officials, who point to the advantages of employing rock salt for snow and ice control.

Make your "first-due" truck a "Wetter Water Wagon." Attack the fire immediately with a booster or 1½" line—charged with "wetter water." Records show you can put out most of your fires—or maintain a foothold while you lay in your heavy lines.

Put Unox Penetrant "Wetter Water" in your booster tank today or proportion it into your lines. Write for the pamphlet "Miami Wetter Water Wagon" (F-7247).

"UNOX" PENETRANT

Unox is a trade-mark of Union Carbide and Carbon Corporation.

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The proper maintenance and repair of structures is more important now than ever before.

Write for booklet

Nationwide Operation Experienced Personnel

PRESSURE CONCRETE COMPANY

NEWARK, N. J. HARRISBURG, PA.
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American Vacuum Leaf Loader
Solves your leaf or clean-up problem

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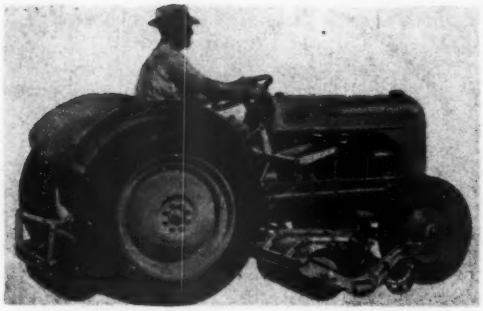


A new hand-set knob adjustment screw is a feature of this mower.

Improved Lightweight Hollow Roller Units

New, improved lightweight hollow roller units are now standard equipment on Park Challenger mowers, reports the manufacturer, the Roseman Mower Corp., Evanston, Ill. The company states that the new rollers were especially designed to banish breakage, one of the most frequent problems with heavy cast-iron rollers. It is also another step forward to completely nonbreakable mower units, and it is said to cut maintenance and repair costs considerably.

Another major improvement is the new hand-set knob adjustment screw. The operator now merely turns a convenient knob to regulate the clearance between bed-knife and blades. Cumbersome wrenches and difficult, time-consuming adjustments are eliminated.

Park Challenger mowers are designed especially for parkways, center lanes, express highways, golf courses, and other large and small tracts of grass.

Asphalt Institute Officers

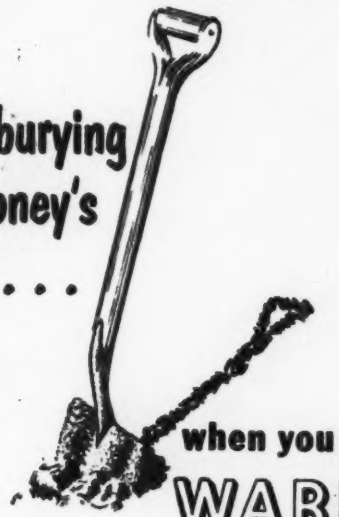
At the annual meeting of the board of directors of The Asphalt Institute, 801 Second Ave., New York 17, N. Y., Harold J. Buck, general sales manager of the American Liberty Oil Co., Dallas, Texas, was elected chairman of the executive committee, and Bernard E. Gray was reelected president. The organization represents the major part of the petroleum asphalt production industry of the United States and Canada.

Elected vice-presidents for the five U. S. geographical divisions of the institute were the following: John D. Mohler, Jr., Pan-Am Southern Corp., for Division I; D. H. Jenks, Jr., Ashland Oil and Refining Co., for Division II; H. G. Nevitt, Socony-Vacuum Oil Co., Inc., for Division III; M. O. Huntress, Allied Materials Corp., for Division IV, and Raymond Harsch, Shell Oil Co., San Francisco, for Division V. The executive committee for the coming year is comprised of these vice-presidents, Mr. Buck and Mr. Gray, and Frank R. Field, Esso Standard Oil Co., ex-officio, who is the retiring chairman of the committee.

Herbert Spencer was reelected secretary of the organization; George R. Christie, Socony-Vacuum Oil Co., Inc., reelected treasurer, and John N. Smith, Socony-Vacuum Oil Co., Inc., assistant treasurer.

The annual meeting was highlighted by a tour over the newly opened New Jersey Turnpike, with the asphalt industry representatives from all sections of the United States and from Canada inspecting what is probably one of the largest single highway projects ever constructed. This asphalt-paved turnpike was particularly interesting to representatives from the Southwest, where Oklahoma is planning a high type of turnpike for early operation between Oklahoma City and Tulsa.

You're burying your money's worth . . .



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CAST IRON PIPE

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STRENGTH . . . TOUGHNESS . . . RESILIENCY . . . *MEAN MAXIMUM LIFE!*

"BUILT TO BE FORGOTTEN"

You can be *sure* you get 100 cents to the dollar when you plan your piping system around *WARREN* Cast Iron Pipe and *WARREN* Cast Iron Fittings.

WARREN Cast Iron Pipe is produced in all sizes from 2" to 84" with all types of joints . . . fittings in numerous nonstandard patterns to meet unusual requirements.

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55 LIBERTY STREET, NEW YORK 5, N. Y.

Bell & Spigot Pipe • Flange Pipe • Mechanical Joint Pipe

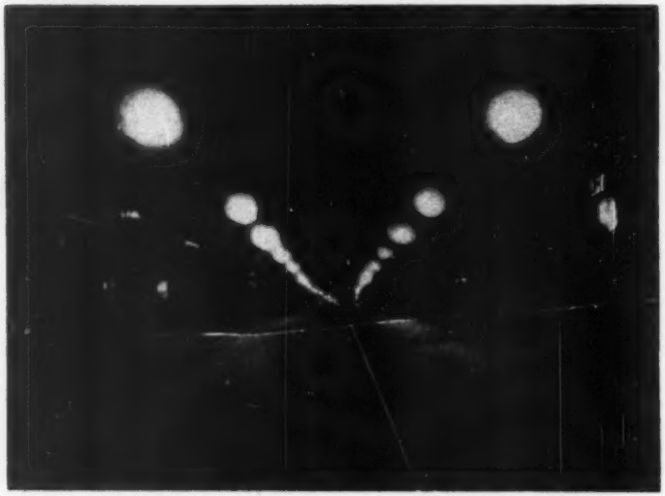
Flexible Joint Pipe • Short Body Bell & Spigot Specials

WARREN PIPE CO. OF MASS. INC. 75 FEDERAL ST. BOSTON, MASS.

95 Years of Continuous Service

On New Rochelle's thoroughfares it's

AMPLEX
STREET LIGHTING LAMPS



The vastly improved street lighting system in New Rochelle, N. Y., recently installed under the supervision of Mr. E. P. Byrne, the city's Electrical Superintendent.

IN EVERY PART of America, more and more municipalities and public utilities are changing over to Amplex Street Lighting Lamps. Experience shows that these lamps afford notably superior lighting and maintain an unsurpassed degree of light output during their extra-long service lives. Specially designed and built to withstand the constant vibration and jolts of traffic, they bring outstanding savings on every installation.

There's an Amplex street lighting lamp of the right type and wattage for every purpose. And for the last word in ruggedness and dependability Amplex **Weatherproof Bulbs** are your topmost specification. Made of "hard glass", these moisture-resistant lamps stop failures caused by climatic conditions . . . bring down long-run costs.

For full facts about Amplex Street Lighting Lamps and their superiority on the job, write Amplex Corporation, Dept K-1, 111 Water Street, Brooklyn 1, New York.

AMPLEX

Sealed-Beam Reflector Lamps, Colorbeam Lamps, Spotlites and Floodlites, Industrial Infra-Red Heat Lamps, Vibration and Rough Service Lamps, Street Lighting Lamps, Traffic Signal Lamps, Incandescent Lamps, Fluorescent Tubes, Display Accessories.

A. G. C. Conducts Campaign To Prevent Accidents

The Associated General Contractors of America, Inc., Munsey Building, Washington 4, D. C., is conducting a campaign to prevent accidents in the construction industry. This was revealed in a letter made public by Glen W. Maxon, Dayton, Ohio, A.G.C. president, which he had sent to the presidents of 118 chapters and branches of the association throughout the country. The letter recommends support of the safety program developed by the organization's accident prevention committee, of which H. B. Alexander, Harrisburg, Pa., is president.

Mr. Maxon calls attention to the 2,300 deaths and 205,000 injuries in the construction industry during 1950, pointing out that there were 93 deaths per 100,000 workers in construction, while the average of all other industries was 27.

He states that "in view of the increasing tendency towards government regulation of our economy, we will, unless we improve our safety record, most certainly be confronted with compulsory laws requiring the observance of hampering and costly accident-prevention methods."

The committee developed a *New Emphasis* program for accident prevention, a copy of which was sent with the letter.

AGENTS WANTED

GOOD COMMISSION
PROMPT DELIVERY

SELL TO ROAD SUPTS:

- BLADES
- CHAINS
- SNOW FENCE
- STEEL POSTS

SELL TO POLICE DEPTS:

- TRAFFIC SIGNS
- SIGN POSTS
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Columbus, Nebr., Purchases Wayne Motor Pick-Up Sweeper

Several city officials are pictured with the new Wayne motor pick-up sweeper recently purchased for the Street Department of Columbus, Nebr. A city of 9,000 population, it now has the most modern methods of street sanitation in operation. The Model 450 sweeper is a product of The Wayne Mfg. Co., 1201 E. Lexington St., Pomona, Calif. In front of the machine, left to right, are: Councilman W. F. Bates; Mayor Lee L. Nauenburg; City Engineer Bruce Gilmore; Councilman E. A. Murphy; Kenneth Jensen, sales representative of the Anderson Equipment Co., Omaha, and Councilman Edward R. Blaser. Driver of the sweeper is Delayne Bruns.

Executive Vice-President Of Cast Iron Pipe Institute

The Cast Iron Soil Pipe Institute, with executive offices in the Heurich Building, 1627 K St., N.W., Washington 6, D. C., reports the appointment of Homer E. Robertson as executive vice-president.

H. E. Robertson

Before this position, Mr. Robertson had been vice-president in charge of sales of the Somerville Iron Works, Newcastle, Pa., manufacturer of cast iron pipe and fittings.

As executive vice-president of the Institute, he will expand the services the organization offers to architects, engineers, builders, and the planning industry in general.

District Sales Engineer For Hubbard and Company

LeRoy A. Ehmsen has been appointed by Hubbard and Co., 6301 Butler St., Pittsburgh, Pa., to represent it as sales engineer, with headquarters in Des Moines, Ia. His territory consists of Iowa, eastern Nebraska, and a few counties in southeastern South Dakota and northwestern Illinois.

Mr. Ehmsen has been associated with the Iowa Power and Light Co., American Telephone and Telegraph, had later experience in building lines, and was manager of several small utility companies.

He studied at Iowa State College, University of Iowa, and Westinghouse Technical Night School.

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Copies anything, anywhere! The Photo-Copier you can carry in a briefcase. The ONLY one that copies curved text near binding of heavy volumes. Ideal for professional, business and industrial use. Eliminates longhand-copying and proofreading notes. Accurate. Guaranteed! As low as $39.00, complete. Write for literature now!

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71 Pease Rd. Woodbridge, Conn.

Compressed Air to handle most jobs For Less!

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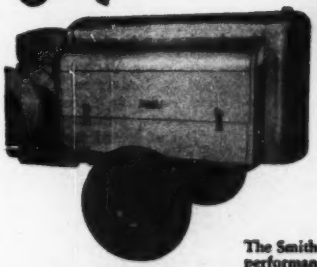
MODEL 105-P

AIR COMPRESSOR



Model 105-P. Has self-starter, battery ignition, voltage regulator, large radiator capacity with thermostat for quick warmup.

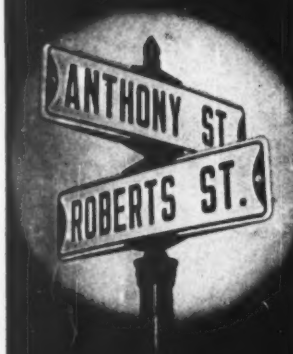
The Smith 105-P delivers smooth power, gives long performance, and will handle most of your compressor work, for less! Powered with Chrysler Ind. 15 Industrial Engine with 377 cu. in. displacement. Delivers 105 cu. ft. per minute. Has sodium cooled valves and Stellite valve seats in engine. Stainless steel disc type valves and Manganese Bronze seats in compressor. Heavy duty with light weight (2100 lbs.). *Write for literature and prices.*

Also the SMITH 70-P AIR COMPRESSOR

GORDON SMITH & CO. 425 COLLEGE ST. BOWLING GREEN, KY.

Beautiful. Legible. Low-Priced

STREET NAME SIGNS



WRITE FOR CATALOG

Cataphote Corporation

TOLEDO, OHIO

M. J. Harper J. W. Northcutt

Rockwell Reorganizes Sales Department

L. A. Dixon, vice-president of the Rockwell Mfg. Co., 400 North Lexington Ave., Pittsburgh 8, Pa., has announced plans for the country-wide reorganization of the company's sales department. Five regional managers have been appointed to service the entire United States, effective Jan. 1st.

The Eastern Region will be under the direction of M. J. Harper, with headquarters in New York City, while the Central Region will be supervised by P. C. Kreuch, with headquarters in Pittsburgh. J. W. Northcutt will have his office in Atlanta, Ga., where he will be in charge of the Southern Region. The Mid-Western area will be under the direction of C. K. Madison, whose offices will be in Houston, Texas. H. Boezinger will locate in Los Angeles, Calif., where he will supervise the Western Region.

Rockwell will continue to maintain district offices in the major cities of the country.

Head Underwood Corp.'s Research and Manufacturing

L. E. Lentz, vice-president of the Underwood Corp., One Park Ave., New York 16, N. Y., directs experimental and development engineering for the company, and Donald S. Sammis, vice-president, is in charge of all factory manufacturing units, according to Philip D. Wagoner, Underwood's chairman and chief executive officer.

In 1918 Mr. Lentz, formerly of the General Vehicle Co., joined the Elliott-Fisher Co., one of the original companies comprising the present Underwood Corp. In 1928, when the Elliott-Fisher and Underwood Typewriter concerns were consolidated, Mr. Lentz was transferred to New York, and has served as a vice-president of the Underwood Corp. since 1931.

Mr. Sammis became associated with Underwood 1935 in Bridgeport and and was works manager until 1947.

The factory units, which will be under the supervision of Mr. Sammis, include the world's largest typewriter factory in Hartford, Conn.; the three accounting and adding machine plants in Bridgeport, Conn.; the plant producing supplies in Burlington, N. J., and plants in New Hartford, Conn., and Southbridge, Mass.

KILL INSECT PESTS with

IRON AGE

MIST SPRAYERS

Users everywhere praise the performance of Farquhar Iron Age Mist Sprayers on golf courses, parks, playgrounds, swimming pools, tourist courts, picnic grounds, and other places where insect pests are a problem.

Here are the outstanding features of the Farquhar Iron Age Model 125: 22 hp, 4 cylinder Wisconsin engine drives sturdy cast aluminum axial flow fan at 87% efficiency, delivering 6,000 to 11,000 cubic feet of air per minute at 90 to 125 mph. New, efficient spray jets meter *exactly* the right amount of mix, either oil or water, to center of high velocity air stream, insuring complete misting of concentrate. Spray jets can be changed quickly to alter droplet size. Turret rotates 360° for full control of air blast. 125 gallon tanks are available with trailer or skid mounting. Comfortable spring seat for operator.

Find out *now* how Farquhar Iron Age Mist Sprayers can make your pest control program *far more effective at less cost.*

Write A. B. FARQUHAR COMPANY, 2636 Duke St., York, Penna.

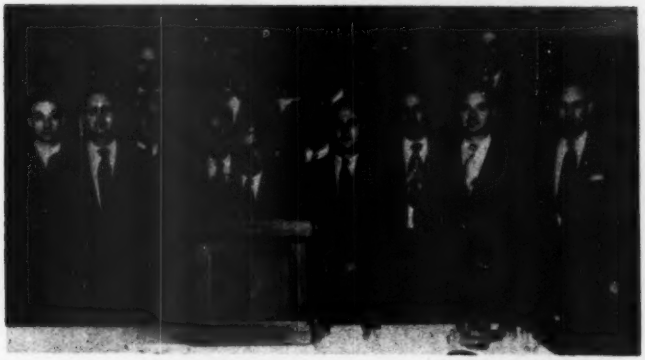
Farquhar

IRON AGE

YORK PA

PLANT AND SPRAY THE IRON AGE WAY

New Types of Pumps Introduced at Peerless Sales Meeting



Personnel at the sales meeting of the Peerless Pump Division, Food Machinery and Chemical Corp., are photographed above. In the first row, left to right, are: C. L. Nickel, Indianapolis; W. E. Griffin, Dallas; C. C. Cook, Atlanta; E. W. Lundy and J. C. Bonsall, Los Angeles; C. H. Sortor, Fresno; E. H. Lanthorn, Indianapolis; F. W. McCann, New York; S. M. Riordan, Los Angeles, and R. H. Hull, Indianapolis. Left to right in the back row are: C. F. Twist and B. A. Tucker, Los Angeles; E. H. Hansen, Fresno, and D. R. Rankin, Los Angeles.

Several new types of pumps were introduced at a meeting of district sales managers and certain engineering and administrative personnel of the Peerless Pump Division, Food Machinery and Chemical Corp., Los Angeles 31, Calif. G. F. Twist, FMC vice-president and Peerless divisional general manager, directed the session which took place in November in New Orleans, La. Serving as chairman was B. A. Tucker, Peerless divisional sales manager.

Other activities of the meeting were reviewing of 1951 accomplishments, and solving difficult manufacturing and sales-service requirements arising from the country's defense preparations and phases of the company's participation in the defense effort.

Named Assistant Manager Of Transite Pipe Department

The Johns-Manville Corp., 22 E. 40th St., New York 16, N. Y., has announced the appointment of Don L. Hinmon as assistant manager of the company's Transite Pipe Department. He succeeds E. A. Phoenix, who became manager of the concern's market surveys.

A civil engineering graduate of Iowa State College, Ames, Iowa, Mr. Hinmon has been with Johns-Manville since 1936, and with the Transite Pipe Department since his return from Army service during World War II.

Joins Engineering Firm Of Smith and Gillespie

Clifford McKibbin, Jr., has joined the engineering firm of Smith and Gillespie, Jacksonville, Fla.

For the past three years, he had been City Manager of Sanford, Fla., prior to which he served as City Manager of Winter Park, Fla. Mr. McKibbin has had extensive experience in engineering work, including diesel-electric and hydro-electric power plants, water pumping, and sewage disposal systems.

Familiar with the problems of municipal administration, he will aid the engineering firm in its expanding practice as municipal consultant.

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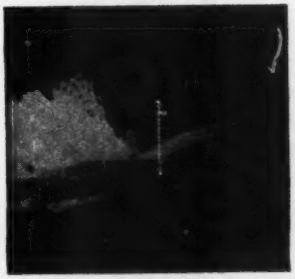

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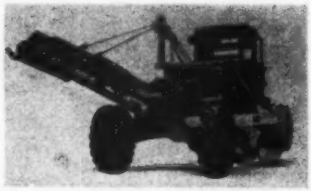
New Elevating Grader Attachment

A new elevating grader attachment, with a hinged carrier to facilitate movement from job to job, has been announced by Williams & Reisser Co., P. O. Box 1126, 23rd and Hickory Sts., Omaha 1, Nebr. The trade name of this unit is Elegrader. It is designed to work on Adams Models 550 and 610 motor graders.

According to the manufacturer, the hinged carrier design eliminates time-taking and troublesome dismantling to allow travel from job to job. It presents no problem for oncoming traffic, and can pass through narrow gates, underpasses, and over narrow bridges. The machine permits the operator good visibility both in the normal operating position or with the carrier raised to traveling position. The carrier is equipped with a 36-inch trough type belt and has equal capacity to a 48-inch conventional, flat-type belt. All troughing rollers are mounted on self-lubricated, permanently sealed, ball bearings which do not require any servicing; all other moving parts are mounted on either ball or roller bearings.



Movement from job to job is facilitated by this new elevating grader attachment with a hinged carrier for motor graders.

Another major feature is the ease of mounting the attachment to the motor grader. No welding, cutting or major alterations to the motor grader are necessary. Precision-made interlocking steel wedge plates reinforce the hinge on the carrier, assuring a rigid, solid stiffness in either working or traveling position.

Joins Neptune Meter's Sales Department

The Neptune Meter Co., 50 W. 50th St., New York 20, N. Y., announces that Willis Harry Badley has joined its sales force and will assist A. D. Mars, Jr., in representing the company in Montana, Colorado, Wyoming, Idaho, and Utah, in the sale of Trident water meters.

W. H. Badley

Mr. Badley majored in chemical engineering at the Kansas State College at Manhattan. He served four years in the United States Air Force prior to becoming associated with the company.

He is the son of Harry W. Badley, who for many years represented the Neptune Meter Co. in Kansas.

Armstrong of U. S. Pipe and Foundry Accepts Economic Post in Europe

General Donald Armstrong, president of the United States Pipe and Foundry Co., Burlington, N. J., since 1948, has resigned as president and director to accept an important post abroad in connection with economic mobilization in Europe. N. F. S. Russell, chairman of the board of directors, has been elected president. Elected a director was Hubert F. O'Brien, president of the A. P. Smith Mfg. Co., East Orange, N. J.

James J. Reynolds, Jr., has resigned as a member of the National Labor Board to return to the pipe company as assistant to the chairman of the board. He left this concern in 1942 to serve as an officer in the Navy until 1946 when he was appointed to the National Labor Relations Board.

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Leece-Neville President

At a recent meeting, the board of directors of The Leece-Neville Co., 5109 Hamilton Ave., Cleveland 14, Ohio, elected P. H. Neville to the presidency. He had previously been vice-president and secretary.

P. H. Neville

In its 42 years, Leece-Neville pioneered many developments, including the self-starter. Manufacturer of heavy-duty generators, starters, regulators, and switches, the company in 1946 introduced the revolutionary a.c.-d.c. alternator system which eliminates the commutator. A.c. power produced by the alternator is charged to direct current by a dry-plate rectifier. The Leece-Neville alternator system is widely used in two-way radio cars, trucks, and buses. Available are capacities to 175 amperes.

Bucyrus-Erie Expands

A larger stock of replacement parts for the excavators, drills, and tractor equipment of the Bucyrus-Erie Co., So. Milwaukee, Wis., is provided for at the company's new western headquarters, 120 Freeway St., South San Francisco, Calif. The new, larger location, includes sales offices and expanded warehouse and yard storage space.

Sales and service personnel covering the excavator division are: J. H. Sackett, western sales manager; H. L. Livingston, sales representative; H. E. Lowe, sales representative, and A. O. Belding, service engineer.

Sales and service personnel covering the tractor equipment division are: H. R. Langford, district representative; John Plehn, John Carlile, and W. O. Blattner, sales representatives, and Ralph Bickers, L. L. Brown, and R. E. Jephson, service engineers.

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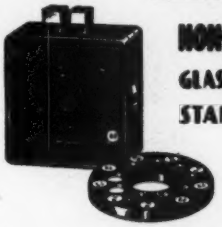

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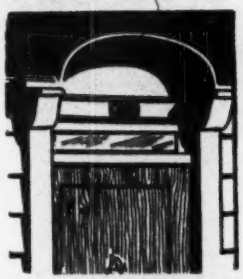

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C. B. Heiberger, Norfolk, Va., City Communications Engineer, left, and Eldridge E. Emswiler, Motorola Communications Engineer, check the two Motorola Handie-Talkie FM 2-way portable radiophones recently purchased by the Norfolk Fire and Police Departments as part of the modernization plan.

Norfolk, Va., Separates Fire and Police Radio

The Norfolk, Va. Fire and Police Departments have completed modernization of their communications systems, including the installation of 46 new FM 2-way radios for cars and trucks and 20 2-way radios for motorcycles. Fire and police departments are now on separate frequencies.

In the old system, 46 2-way cars and trucks in both departments all operated on a single a.m. frequency, and 21 motorcycles were equipped with receivers only. The new central dispatching office includes two Motorola 250-watt base stations, produced by Motorola, Inc., 4545 Augusta Blvd., Chicago 51, Ill., one for the Fire Department, and one for the Police Department.

Faster-Acting Snow Melting Chemical

Speco, Inc., 7308 Associate Ave., Cleveland 9, Ohio, reports that its product, Ice Rem, ice and snow-melting chemical crystals, possesses a thawing capacity 30 times greater than that of salt. It will not harm tires, shoes, asphalt surfaces, or concrete.

According to the manufacturer, Ice Rem, when sprinkled on the exposed surface at the beginning of a snow or sleet storm, melts snow on sidewalks, driveways, loading docks, streets, and parking lots, during that and subsequent snows until its action is exhausted. The chemical compound "spreads itself" and leaves no messy residue.

Ice Rem is one of the ten recipients of a 1951 Lewis and Conger Safety Award. It is available in 10-pound cans, 25-pound pails, and 100-pound fiber drums. Ton lots are shipped in waterproof 100-pound bags. Bulletin L-4656 describes the ice and snow-removal agent in detail.

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Murdock Mfg. and Supply Co. 176

Nadig, Henry Davis 215
National Clay Pipe Mfrs., Inc. 166
National Supply Co., Engine Div. 75
Neenah Foundry Co. 46
Neptune Meter Co. 82
Nichols Engineering and Res. Corp. 60
Nordberg Mfg. Co. 53
Northern Gravel Co. 74
Nussbaumer, Clarke & Velzy, Inc. 215
Nutting Co., H. C. 215

Onan & Sons, Inc., D. W. 208
Oliver Corporation 65

Pacific Flush Tank Co. 180
Palmer & Baker, Inc. 215
Parsons Company 36
Parsons, Brinkerhoff, Hall and Macdonald 216
Permutit Company 170
Pfeiffer & Shultz 216
Pitometer Company 216
Pittsburgh-Des Moines Steel Co. 164
Pittsburgh Testing Laboratory 216
Potts Assoc., Clyde 216
Premax Products Div. 209
Pressure Concrete Co. 202
Prismo Safety Corporation 134
Productions, Inc. 216

Ray-Lind, Inc. 174
Recordak Corporation 125
Refinite Corp. 68
Remington Rand Inc. 49
Revere Electric Mfg. Co. 196
Rhodes, Inc., M. H. 219
Robert & Co., Associates 216
Rockwell Mfg. Co. 61
Russell & Axon 216
Ryerson & Co., Inc., Joseph T. 122

Sanitary Engineers 211, 217
Seelye, Stevenson, Value & Knecht 217
Shwayder Brothers, Inc. 146
Sherman Products, Inc. 44
Skinner Co., M. B. 14
Smith Co., Gordon 205
Snyder, McLellan, Rhoades & Watson 217
Solvay Sales Div., Allied Chemical and Dye Corp. 51
Steelcote Mfg. Co. 148
Stellwagon, Robert H. 217
Stilson & Assoc., Ltd., Alden E. 217
Streander & Affiliates, Philip B. 217
Swenson Spreader & Mfg. Co. 48

Tarrant Mfg. Co. 200
Texas Co. 2, 24
Toledo Testing Laboratory 217
Topf, S. B. 217
Toledo Pipe Threading Machine Co. 198
Trojan Mfg. Co. 180
Tropical Paint & Oil Co. 8

Union Metal Mfg. Co. 138
United Seal Co. 50
U. S. Pipe & Foundry Co. 52
U. S. Steel Subsidiary 190
U. S. Testing Co., Inc. 217

Wallace & Tiernan Co., Inc. 55, 220
Warren Foundry Co., Inc. 208
Westinghouse Electric Corp. 130
White Mfg. Co. 180
Wilkins & Assoc., E. T. 217
Wilkinson Products Co. 50
Wilshire Power Sweeper Co. 26
Wood Co., R. D. 47
Worthington-Gamon Meter Div. 68

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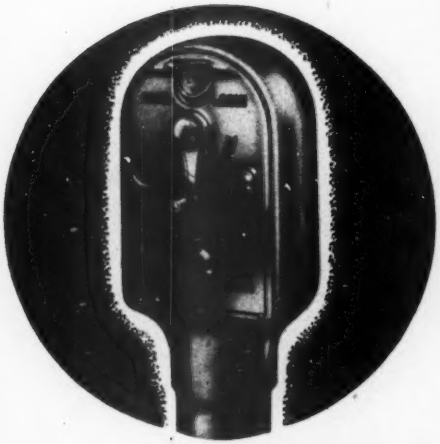

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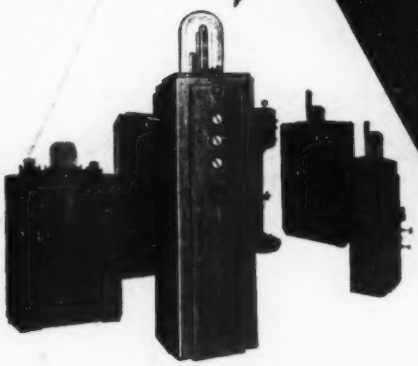

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